



MathStep

4

***Teacher's
Resource Book***

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Chapter 1: The Whole Numbers up to 100 000**Exercise 1.1****Circle the correct place value number**

1. Three hundred, thirty thousand, five hundred and thirteen

b. 330,513

2. Five hundred fifty four thousand one hundred and one

b. 554,101

3. two hundred sixty five thousand seven hundred and seventeen

b. 265,717

4. Ten thousand, one hundred and one

a. 10,101

5. nine hundred ninety thousand nine hundred and ninety

b. 990,990

6. eight hundred ninety thousand, four hundred eighty five

c. 890,485

7. seventy five thousand one hundred and forty five

c. 75,145

8. sixty three thousand, four hundred and fifty five

a. 63, 455

9. four hundred thirty-two thousand and five

b. 432,005

10. five hundred fifty thousand, three hundred and forty

a. 550,340



Exercise 1.2

1. Write the following numbers in expanded form

a. **2,331**

$$2000+300+30+1$$

b. **103,442**

$$100,000+0+3000+400+40+2$$

c. **12,533**

$$12,000+500+30+3$$

d. **795,725**

$$700,000+90,000+5,000+700+20+5$$

e. **535,815**

$$500,000+30,000+5,000+800+10+5$$

f. **990,644**

$$900,000+90,000+0+600+40+4$$

g. **82,815**

$$80,000+2,000+800+10+5$$

h. **375,252**

$$300,000+70,000+5,000+200+50+2$$

i. **760,400**

$$700,000+60,000+0+400+0+0$$

j. **4,670**

$$4,000+600+70+0$$

k. **57,238**

$$50,000+7,000+200+30+8$$

l. **289,922**

$$200,000+80,000+9,000+900+20+2$$

m. **30,422**

$$30,000+0+400+20+2$$

n. **811,605**

$$800,000+10,000+1,000+600+0+5$$

o. **630,425**

$$600,000+30,000+0+400+20+5$$

p. **556,505**

$$500,000+50,000+6,000+500+0+5$$



2. Write the following expanded numbers in whole number form.

- a. 757,192
- b. 82,302
- c. 1,223
- d. 333,333
- e. 47,245
- f. 295.627

3. Fill in the missing zeros and convert the numbers from expanded form to whole numbers.

- a. 600,000 = 653,308
- b. 1,000 = 111,111
- c. 30,000 = 235,522
- d. 70 = 777.777
- e. 80,000 = 585,421
- f. 900,000 = 999,999
- g. 500 = 321,509
- h. 7,000 = 887,355

Exercise 1.3**1. What are the value of digits in blue**

- a. 5,000
- b. 100
- c. 600,000
- d. 2,000
- e. 700
- f. 50
- g. 3,000
- h. 200
- i. 8
- j. 90,000

2. Write the numbers in words

- a. Seven hundred and fifty five thousand, one hundred and twenty three
- b. Ninety seven thousand, two hundred and twenty three
- c. Six hundred and twenty one thousand, four hundred and fifty seven
- d. Ninety five thousand, three hundred and thirty.
- e. Two hundred and sixty thousand, three hundred and eight



- f. Forty eight thousand, nine hundred and two.
- g. Two thousand two hundred and twenty one.
- h. Forty four thousand, two hundred and five.
- i. Seven hundred and fourteen thousand, four hundred and seventeen.
- j. Five hundred and sixty five thousand, six hundred and fifty six.

3. Convert the following word statements into number statements

- a. 235, 508
- b. 820, 055
- c. 54,260
- d. 38,755
- e. 490,462
- f. 60,701

4. Write the missing numbers

- a. 600
- b. 40,000 , 600 , 3
- c. 4,000
- d. 1,000
- e. 40,000 ,, 600
- f. 4,000 ,, 40
- g. 50,000 ,, 90
- h. 2,000
- i. 500,000 ,, 3,000
- j. 400

Exercise 1.4

1. Fill in the blanks with = (equal) , > (bigger), or < (smaller) sign.

- | | |
|-----------|-------------|
| a. \leq | g. \geq |
| b. \leq | h. \leq |
| c. \geq | i. \equiv |
| d. \geq | j. \geq |
| e. \leq | k. \geq |
| f. \leq | l. \geq |

2. Mark which of the following number statements are true or False.a. Truee. Falseb. Falsef. Truec. Falseg. Falsed. Trueh. True**Exercise 1.5**

Compare the number:

- | | |
|------------|------------|
| 1. \geq | 11. \leq |
| 2. \leq | 12. \leq |
| 3. \geq | 13. $=$ |
| 4. \leq | 14. \leq |
| 5. \leq | 15. \leq |
| 6. \geq | 16. $=$ |
| 7. \leq | 17. \geq |
| 8. \geq | 18. \geq |
| 9. \geq | 19. \geq |
| 10. \leq | 20. \leq |

Circle the correct answer:

- | | |
|------|------|
| 1. B | 4. C |
| 2. C | 5. B |
| 3. C | 6. C |

Exercise 1.6:**1. Write the given numbers in ascending order.**

- 100001, 100010, 101110, 103119
- 806688, 868818, 878088, 889800
- 440444, 444000, 447400, 447445
- 225399, 225457, 225479, 225488
- 990301, 991299, 999889, 999999
- 503552, 503553, 503555, 503556

2. Write the given numbers in descending order

- 575750, 533545, 523555, 513554
- 337330, 334443, 334354, 334334,
- 620662, 610669, 610661, 605661



- d. 444024, 444004, 440001, 400440
- e. 222022, 220220, 220202, 200222
- f. 110110, 110100, 110011, 101101

3. Fill in the boxes in the following number sequences with the right numbers.

- a. 10013, 10015, 100017
- b. 200010, 200012, 200014
- c. 555552, 555554, 555556,
- d. 700000, 720000, 740000
- e. 888887, 888889, 888891
- f. 000010, 000012, 000014

Exercise 1.7

1. Round off the following numbers.

A. to the nearest 10

- a. 20 b. 50
- c. 60 d. 80
- e. 80 f. 90

B. to the nearest 100

- a. 100 b. 200
- c. 200 d. 100
- e. 200 f. 200

C. to the nearest 1000

- a. 1000 b. 3000
- c. 7000 d. 5000
- e. 9000 f. 10000

D. to the nearest 10000

- a. 20000 b. 30000
- c. 600000 d. 100000
- e. 200000 f. 700000

E. each of the following number to the nearest 10, 100, 1000 and 10,000

- a. 13490, 13500, 13000, 10000
- b. 22120, 22100, 22000, 20000
- c. 39770, 39700, 40000, 40000
- d. 58320, 58300, 58000, 60000
- e. 77780, 77800, 78000, 80000
- f. 92380, 92400, 92000, 90000



2. Solve the following word problems and then round off the answers

- 30000
- 20000 For both
- $1135+1975= 3110$ Round off 3000
- $95550- 90990=4560$ profit round off 5000
- 30000

End of Chapter Exercises:**(A) Choose the correct answers**

- B
- B
- C
- B
- C
- D
- D
- C
- A
- C

(B) Solve the following

1. 800, 4000

2. five thousand, six hundred and sixty nine

Eight thousand seven hundred and sixty five

3. C. 27,980 ,, 28,097 ,, 28,207 ,, 29,700

4. A $600,000+ 70,000+ 8,000+ 400+ 20 + 5$

5. D $2,000+400+60+1$

6. A. Tens

7. C. 8,674

8. B. $600,000+60,000+600+6$

9. C. 23,500

10.

i. $400,000+70,000+5,000+300+20$

ii. $9,000,000+800,000+40,000 + 7,000 + 200+ 10+ 5$

iii. $90,000,000 + 7,000,000 + 600,000 + 40,000 + 5,000 + 300 + 10$

iv. $30,000,000 + 400,000 + 50,000 + 8,000 + 90 + 4$

a. {i} is the smallest b. {iii} is the greatest



11.

- a. 70002509, 18950045, 527864, 95432
95432, 527864, 18950045, 70002509
- b. 9754, 8320, 847, 571
571, 847, 8320, 9754
- c. 38802, 36501, 25751, 9801
9801, 25751, 36501, 38802
- d. 85400, 7861, 7500, 5000
5000, 7500, 7861, 85400
- e. 92547, 88715, 45321, 1971
1971, 45321, 88715, 92547

C. Solve these Word problems

- 1. $7059 + 7259 = 14,318 - 3693 = 10,625$
- 2. $9431 - 6572 = 2859$
- 3. $4771 - 4636 = 135$ grams crunchy peanut butter
- 4. 9 hundred
- 5. 2 thousand

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Chapter 2: Operation on whole Numbers up to 100,000

Exercise 2.1

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Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
1 1 7 3 2	5 7 7 1 8	1 1 2 1 2	3 1 2 5 4
+ 9 8 4 6	+ 1 2 3 9	+ 3 1 0 8 9	+ 4 1 8 1 5
2 1 5 7 8	5 8 9 5 7	4 2 3 0 1	7 3 0 6 9

Exercise 2.2

Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
2 7 7 8 0	2 5 1 6	6 7 0 7 6	7 0 5 5 4
+ 5 7 3 5 9	+ 2 2 2 5 5	+ 8 1 8 3	+ 8 5 2 8
8 5 1 3 8	2 4 7 7 1	7 5 2 5 9	7 9 0 8 2

Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
1 1 2 7 5	9 9 9 6	2 0 8 4 9	4 0 9 9 1
+ 7 8 2 4 9	+ 2 2 3 0 7	+ 7 5 0 0 8	+ 5 5 6 9 1
8 9 5 2 4	3 2 3 0 3	9 5 8 5 7	9 6 6 8 2

Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
5 9 9 0 9	4 9 4 7 2	9 0 4 6 7	1 9 6 2
+ 1 6 9 0 1	+ 4 5 8 3 4	+ 8 8 1 0	+ 9 2 8 9 6
7 6 8 1 0	9 5 3 0 6	9 9 2 7 7	9 4 8 5 8

Tth Th H T O	Tth Th H T O	Tt Th H T O	Tth Th H T O
1 3 1 9 5	4 1 2 0 0	1 1 1 1 1	3 1 2 1 5
+ 7 8 1 9 7	+ 1 3 9 5 8	+ 8 8 8 8 9	+ 4 1 8 1 5
9 1 3 9 2	5 5 1 5 8	1 0 0 0 0 0	7 3 0 3 0



Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
3 1 0 8 5	2 1 9 3 8	7 6 9 8 7	5 4 3 1 2
+2 1 3 1 2	+ 2 7 8 6 3	+1 4 5 6 4	+ 1 5 4 1 8
5 2 3 9 7	4 9 8 0 1	9 1 5 5 1	6 9 7 3 0

Exercise 2.3

Tth Th H T O	Tth Th H T O	Tt Th H T O	Tth Th H T O
2 2 0 1 5	1 4 2 8 0	1 4 7 1 8	2 3 1 9
+ 3 2 0 7 5	+ 1 3 9 7 5	+ 1 6 4 8 0	+ 5 8 5 6
5 4 0 9 0	2 8 2 5 5	3 1 1 9 8	8 1 7 5

Tth Th H T O
4 5 0 0 0
+4 5 5 0 0
9 0 5 0 0

Exercise 2.4

Solve the sums with rounding off to the nearest 100.

- a. 94,347= round off to the nearest 100= 94,300
- b. 18,175= 18,200
- c. 20,055= 20,100
- d. 92,400= 92,400
- e. 44,055=44,100
- f. 62,400= 62,400
- g. 53,055= 53,100
- h. 65,400= 65,400



- i. $99,055 = 99,100$
- j. $94,500 = 94,500$

B: Solve the following word problems and rounding off to the nearest 100.

1. $9,590 = \text{round off to the nearest } 100 = 9,600$
2. $7,965 = 8,000$
3. $14,902 = 14,900$
4. $6,296 = 6,300$
5. $1,589 = \text{round off to nearest } 10 = 1,590$

Exercise 2.5:

A . Subtract the given equations

Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
8 2 7 2 5	9 3 0 2 0	9 3 5 5 9	8 2 8 7 5
- 5 2 5 5 5	- 8 6 2 8 5	- 6 8 1 0 7	- 6 2 5 8 7
3 0 1 7 0	6 7 3 5	2 5 4 5 2	2 0 2 8 8
Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
6 1 2 7 5	7 8 1 6 9	9 7 0 0 2	9 4 4 0 7
- 4 8 2 4 9	- 1 1 2 0 8	- 7 5 0 0 8	- 8 0 2 0 0
1 3 0 2 6	6 6 9 6 1	2 1 9 9 4	1 4 2 0 7
Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
5 9 9 0 8	7 6 2 3 9	7 3 6 5 2	9 3 4 9 0
- 3 6 9 0 1	- 6 5 1 1 4	- 5 5 9 1 5	- 3 8 7 4 4
2 3 0 0 7	1 1 1 2 5	1 7 7 3 7	5 4 7 4 6



Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
3 4 4 3 3	6 6 8 3 3	5 7 9 2 0	3 4 0 4 7
- 1 4 1 5 4	- 3 2 0 1 6	- 8 1 5 3	- 3 3 3 1 7
2 0 2 7 9	3 4 8 1 7	4 9 7 6 7	7 3 0

Tth Th H T O	Tth Th H T O	Tt Th H T O	Tth Th H T O
8 4 6 6 0	2 2 5 2 1	2 6 0 5 8	5 4 5 2 5
- 3 4 7 4 4	- 2 0 5 0 0	- 1 7 0 9 6	- 1 6 5 4 2
4 9 9 1 6	2 0 2 1	8 9 6 2	3 7 9 8 3

Tth Th H T O	Tth Th H T O	Tth Th H T O	Tth Th H T O
9 9 5 5 6	3 0 9 2 2	1 4 7 6 1	4 5 2 1 3
- 7 9 4 1 8	- 2 7 9 7 2	- 1 1 5 0 5	- 4 1 8 3 1
2 0 1 3 8	2 9 5 3	3 2 5 6	3 3 8 2

B: Solve the following Word problems

Th H T O	Tth Th H T O	Tt Th H T O	Tth Th H T O
1 7 4 0	5 5 8 9 8	8 9 2 3 4	7 5 8 0 0
- 1 2 2 5	- 4 8 8 9 7	- 8 3 9 9 9	- 5 5 5 0 0
5 1 5	7 0 0 1	5 2 3 5	2 0 3 0 0

Tth Th H T O
3 5 5 0 0
- 2 8 8 0 0
6 7 0 0



Exercise 2.6 with rounding off to nearest 1000. (left to right)

A:

Tth Th H T O 6 1 4 7 2 - 3 6 3 4 4 <hr/> 2 5 1 2 8 <hr/> 2 5 0 0 0	Tth Th H T O 4 7 5 2 1 - 9 8 2 9 <hr/> 3 7 6 9 2 <hr/> 3 8 0 0 0	Tth Th H T O 2 5 8 8 9 - 1 7 8 7 5 <hr/> 8 0 1 4 <hr/> 8 0 0 0	Tth Th H T O 9 7 2 7 8 - 2 0 7 2 7 <hr/> 7 6 5 5 1 <hr/> 7 7 0 0 0
--	--	--	--

Tth Th H T O 7 2 5 0 0 - 5 2 5 5 <hr/> 6 7 2 4 5 <hr/> 6 7 0 0 0	Tth Th H T O 8 6 0 0 5 - 1 0 1 0 9 <hr/> 7 5 8 9 6 <hr/> 7 6 0 0 0	Tth Th H T O 9 9 8 9 7 - 3 4 7 8 9 <hr/> 6 5 1 0 8 <hr/> 6 5 0 0 0	Tth Th H T O 5 3 0 7 5 - 1 2 3 2 5 <hr/> 4 0 7 5 0 <hr/> 4 1 0 0 0
--	--	--	--

Tth Th H T O 5 1 9 7 5 - 2 0 0 8 0 <hr/> 3 1 8 9 5 <hr/> 3 2 0 0 0	Tth Th H T O 6 1 1 7 5 - 3 3 3 2 5 <hr/> 2 7 8 5 0 <hr/> 2 8 0 0 0	Tth Th H T O 7 7 7 6 5 - 2 6 5 9 1 <hr/> 5 1 1 7 4 <hr/> 5 1 0 0 0	Tth Th H T O 8 2 2 4 5 - 8 0 1 2 4 <hr/> 2 1 2 1 <hr/> 2 0 0 0
--	--	--	--

Tth Th H T O 9 6 4 9 7 - 9 6 1 2 3 <hr/> 3 7 4 <hr/> N I L	Tth Th H T O 9 9 3 5 6 - 7 9 6 3 7 <hr/> 1 9 7 1 9 <hr/> 2 0 0 0 0	Tth Th H T O 2 2 1 1 6 - 6 0 1 8 <hr/> 1 6 0 9 8 <hr/> 1 6 0 0 0	Tth Th H T O 8 4 3 2 8 - 4 4 1 8 9 <hr/> 4 0 1 3 9 <hr/> 4 0 0 0 0
--	--	--	--



Tth	Th	H	T	O	Tth	Th	H	T	O	Tt	Th	H	T	O	Tth	Th	H	T	O				
4	8	4	4	6	5	8	6	3	8	8	5	6	2	0	5	2	5	4	5				
-	4	2	0	2	9	-	4	1	8	6	0	-	6	9	0	0	7	-	2	4	5	6	1
<hr/>					<hr/>					<hr/>					<hr/>								
	6	4	1	7	1	6	7	7	8	1	6	6	1	3	2	7	9	8	4				
<hr/>					<hr/>					<hr/>					<hr/>								
	6	0	0	0	1	7	0	0	0	1	7	0	0	0	2	8	0	0	0				

B: (round off to nearest 100)

Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O			
5	6	2	4	5	8	6	8	2	5	8	7	4	3	8	3	7	8	0				
-	3	0	7	4	5	-	4	5	5	5	0	-	5	8	0	1	5	-	1	7	7	2
<hr/>					<hr/>					<hr/>					<hr/>							
	2	5	5	0	0	4	1	2	7	5	2	9	4	2	3	2	0	0	8			
<hr/>					<hr/>					<hr/>					<hr/>							
	2	5	5	0	0	4	1	3	0	0	2	9	4	0	0	2	0	0	0			

Tth	Th	H	T	O	
3	5	7	2	8	
+	3	0	4	4	4
<hr/>					
6	6	1	7	2	
<hr/>					
6	6	0	0	0	

Exercise 2.7 A (left to right)

A: Solve the following

Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O
	7	2	4	5		4	3	1	7		5	5	8	6			9	7	8
			X	8			X	1	2			X	1	4				X	8
<hr/>					<hr/>					<hr/>					<hr/>				
5	7	9	6	0		8	6	3	4	2	2	3	4	4	7	8	2	4	
<hr/>					<hr/>					<hr/>					<hr/>				
					4	3	1	7	X	5	5	8	6	x					
<hr/>					<hr/>					<hr/>					<hr/>				
					5	1	8	0	4	7	8	2	0	4					



Tth	Th	H	T	O
	4	6	8	4
		X	1	8
<hr/>				
3	7	4	7	2
<hr/>				
4	6	8	4	x
<hr/>				
8	4	3	1	2

Tth	Th	H	T	O
	3	8	9	4
		X	2	2
<hr/>				
	7	7	8	8
<hr/>				
7	7	8	8	X
<hr/>				
8	5	6	6	8

Tth	Th	H	T	O
	7	5	6	7
			X	9
<hr/>				
6	8	1	0	3

Tth	Th	H	T	O
	5	7	8	9
				X
<hr/>				
5	2	1	0	1

Tth	Th	H	T	O
	9	4	1	3
		X	7	
<hr/>				
6	5	8	9	1

Tth	Th	H	T	O
	9	9	0	
		X	9	9
<hr/>				
8	9	1	0	
<hr/>				
8	9	1	0	X
<hr/>				
9	8	0	1	0

Tth	Th	H	T	O
	4	0	3	5
			X	2
<hr/>				
8	0	7	1	4

Tth	Th	H	T	O
	2	3	2	5
				X
<hr/>				
6	9	7	6	8

Tth	Th	H	T	O
	3	5	6	6
		X	9	
<hr/>				
3	2	0	9	4

Tth	Th	H	T	O
	6	3	2	4
			X	7
<hr/>				
4	4	2	6	8

Tth	Th	H	T	O
	3	8	4	0
		X	2	7
<hr/>				
2	6	8	8	0
<hr/>				
7	6	8	0	X
<hr/>				
1	0	3	6	8

Tth	Th	H	T	O
		4	1	5
		X	9	3
<hr/>				
	1	2	4	5
<hr/>				
3	7	3	5	X
<hr/>				
3	8	5	9	5

Tth	Th	H	T	O
	1	2	0	8
			X	8
<hr/>				
9	6	6	8	8

Tth	Th	H	T	O
	2	0	1	9
			X	4
<hr/>				
1	0	0	9	5
<hr/>				
8	0	7	6	X
<hr/>				
9	0	8	5	5

Tt	Th	H	T	O
	6	0	0	6
			X	1
<hr/>				
1	8	0	1	8
<hr/>				
6	0	0	6	X
<hr/>				
7	8	0	7	8

Tth	Th	H	T	O
	8	7	9	0
			X	1
<hr/>				
	8	7	9	0
<hr/>				
8	7	9	0	X
<hr/>				
9	6	6	9	0



Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O		
	1	1	1	1			8	7	6		1	8	5	7		4	4	1	4		
		X	8	9			X	8	7			X	2	9			X	2	3		
<hr/>					<hr/>					<hr/>					<hr/>						
	9	9	9	9		6	1	3	2		1	6	7	1	3		1	3	2	4	2
8	8	8	8	X	7	0	0	8	X	3	7	1	4	X	8	8	2	8	x		
<hr/>					<hr/>					<hr/>					<hr/>						
9	8	8	7	9	7	6	2	1	2	5	3	8	5	3	1	0	1	5	2	2	

B:

1. $88 \times 24 = 2,112$
2. $1952 \times 48 = 93,696$
3. $267 \times 75 = 20,025$
4. $8250 \times 12 = 99,000$
5. $650 \times 58 = 37,700$
6. $128 \times 37 = 4,736$
7. $7835 \times 8 = 62,680$
8. $2576 \times 36 = 92,736$
9. $3875 \times 17 = 65,875$
10. $395 \times 24 = 9,480$
11. $17537 \times 5 = 87,685$
12. $2654 \times 27 = 71,658$

Exercise 2.8

A: round off to nearest 1000

Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O
2	0	5	5	1	8	5	9	0	6	6	2	7	4	9	7	8			
		X	3				X	8				X	1	4			X	1	3
<hr/>					<hr/>					<hr/>					<hr/>				
6	1	6	5	3	6	8	7	2	0	2	6	5	0	8	1	4	9	3	4
<hr/>					<hr/>					<hr/>					<hr/>				
6	2	0	0	0	6	9	0	0	0	6	6	2	7	X	4	9	7	8	X
<hr/>					<hr/>					<hr/>					<hr/>				
										9	2	7	7	8	6	4	7	1	4
<hr/>					<hr/>					<hr/>					<hr/>				
										9	3	0	0	0	6	5	0	0	0



Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O
	6	1	7	7		2	3	9	9		5	5	6	7		5	6	8	9
		X	1	4			X	2	1			x	9			X	1	6	
2	4	7	0	8	2	3	9	9	5	0	1	0	3	3	4	1	3	4	
6	1	7	7	X	4	7	9	8	X	5	0	0	0	0	5	6	8	9	X
8	6	4	7	8	5	0	3	7	9						9	1	0	2	4
8	6	0	0	0	5	0	0	0	0						9	1	0	0	0

Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O			
		4	8	4			2	6	3			6	7	4			2	8	6	4		
	X	2	0	0		X	3	6	7		X	1	0	5			X	3	4			
		0	0	0			1	8	4	1			3	3	7	0		1	1	4	5	6
		0	0	0	X	1	5	7	8	X	0	0	0	0	X		8	5	9	2	X	
9	6	8	X	X	7	8	9	X	X	6	7	4	X	X		9	7	3	7	6		
9	6	8	0	0	9	6	5	2	1	7	0	7	7	0		9	7	0	0	0		
9	7	0	0	0	9	7	0	0	0	7	1	0	0	0								

Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O			
	1	2	3	5		2	1	2	3		1	6	0	4			1	7	0	4		
		X	3	4			X	4	1			X	3	5			X	4	8			
	4	9	4	0			2	1	2	3			8	0	2	0		1	3	6	3	2
3	7	0	5	X	8	4	9	2	X	4	8	1	2	X		6	8	1	6	X		
4	1	9	9	0	8	7	0	4	3	5	6	1	4	0		8	1	7	9	2		
4	2	0	0	0	8	7	0	0	0	5	6	0	0	0		8	2	0	0	0		



Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O	Tth	Th	H	T	O			
	1	8	0	1			2	3	4		1	1	9	5		1	0	2	9			
	X	5	3	3		X	3	9	0		X	5	8	5			X	9	0			
<hr/>					<hr/>					<hr/>					<hr/>							
	5	4	0	3			0	0	0		5	9	7	5			0	0	0			
	5	4	0	3	X	2	1	0	6	X		9	5	6	0	X	9	2	6	1	X	
	9	0	0	5	X	X	7	0	2	X	X	5	9	7	5	X	X	9	2	6	1	0
<hr/>					<hr/>					<hr/>					<hr/>							
	9	5	9	9	3	3	9	1	2	6	0	6	9	9	0	7	5	9	3	0	0	0
<hr/>					<hr/>					<hr/>					<hr/>							
	9	6	0	0	0	0	9	1	0	0	0	6	9	9	0	0	0					

B: round off to nearest 1000.

- $8,535 \times 7$
 $= 59,745$
 $= 60,000$
- $1,700 \times 35$
 $= 59,500$
 $= 60,000$
- $28,058 \times 3$
 $= 84,174$
 $= 84,000$
- $7,500 \times 12$
 $= 90,000$
 $= 90,000$
- $1,675 / 5$
 $= 335$ cost of bulb
 $= 335 \times 75$
 $= 25,125$
 $= 25,000$
- 648×158
 $= 102,384$
 $= 102,000$



$$\begin{aligned} 7. \quad & 395 \times 156 \\ & = 61,620 \\ & = 62,000 \end{aligned}$$

$$\begin{aligned} 8. \quad & 28,800 \times 3 \\ & = 86,400 \\ & = 86,000 \end{aligned}$$

$$\begin{aligned} 9. \quad & 1,568 \times 52 \\ & = 81,536 \\ & = 82,000 \end{aligned}$$

$$\begin{aligned} 10. \quad & 15,122 \times 5 \\ & = 75,610 \\ & = 76,000 \end{aligned}$$

$$\begin{aligned} 11. \quad & 36 \times 65 \\ & = 2,340 \\ & = 2,000 \end{aligned}$$

$$\begin{aligned} 12. \quad & 1,450 \times 63 \\ & = 91,350 \\ & = 91,000 \end{aligned}$$

Exercise 2.9

A Solve the following division problems

$$\begin{aligned} \text{a.} \quad & 37275 / 15 \\ & = 12425 / 5 \\ & = 2485 \text{ Ans} \end{aligned}$$

$$\begin{aligned} \text{b.} \quad & 75282 / 6 \\ & = 37641 / 3 \\ & = 12547 \text{ Ans} \end{aligned}$$

$$\begin{aligned} \text{c.} \quad & 10428 / 4 \\ & = 5214 / 2 \\ & = 2,607 \text{ Ans} \end{aligned}$$



d. $13153 / 7$
 $=1879$ **Ans**

e. $18288/16$
 $=9144/8$
 $=4572/4$
 $=2286/2$
 $=1143$ **Ans**

f. $26741/13$
 $=2,057$ **Ans**

g. $24804/12$
 $=12402/6$
 $=6201/3$
 $=2,067$ **Ans**

h. $40880/8$
 $=20440/4$
 $=10220/2$
 $=5110$ **Ans**

i. $2745/5$
 $=549$ **Ans**

j. $38108/14$
 $=19054/7$
 $=2,722$ **Ans**

B:

1. $240 / 2 = 120$ sq meters $89000 / 2 = 44,500$ each
2. $87390 / 30 = 2,913$
3. $75740 / 28 = 2,705$
4. $90800 / 5 = 18,160$
5. $36840 / 6 = 6,140$



Exercise 2.10**A** (with round off to nearest 1000)

a. $25925/5$
 $=5,185$
 $= 5,000$ **Ans**

b. $30424/8$
 $=15212/4$
 $=7606/2$
 $= 3,803$
 $= 4,000$ **Ans**

c. $89782/7$
 $=12,826$
 $=13,000$ **Ans**

d. $17843/7$
 $=2,549$
 $= 3,000$ **Ans**

e. $24500/5$
 $=4,900$
 $=5,000$ **Ans**

f. $3417/17$
 $=201$

g. $66332/14$
 $=33166/7$
 $=4,738$
 $= 5,000$ **Ans**

h. $42880/16$
 $=21440/8$
 $=10720/4$
 $=5360/2$
 $=2,680$
 $= 3,000$ **Ans**

i. $32350/5$
 $=6,470$
 $= 6,000$ **Ans**



j. $87230/12$
 $=43615/6$
 $=7269.16$
 $=7000$

B: (round off to nearest 10)

a. $526 / 32$
 $=263/16$
 $=16.4375$
 $= 20$ **Ans**

b. $279/47$
 $=5.936$
 $= 10$

c. $756/15$
 $252/5$
 $=50.4$
 $= 50$

d. $551/42$
 $=13.119$
 $= 10$

e. $388/65$
 $=5.96$
 $=10$

f. $985/72$
 $=13.680$
 $= 10$

g. $794/18$
 $=44.111$
 $= 40$

h. $671/26$
 $=25.807$
 $= 30$

i. $299/36$
 $=8.305$
 $= 10$



$$\begin{aligned} \text{j. } & 798/41 \\ & = 19.463 \\ & = 20 \end{aligned}$$

C : word problems (round off to nearest 1000)

1. $3184 / 2 = 1,592 = 2,000$
2. $2727 / 3 = 909$, $24534 / 909 = 26.990 = 27.000$
3. $4,925 = 5,000$
4. $300 / 40 = 7.5$
5. $18300 / 3 = 6,100 = 6,000$
6. $7960 / 10 = 796 = 800$
7. $1848 / 14 = 132$
8. $5750 / 125 = 46$
9. $6239 / 17 = 367$
10. $1230 / 15 = 82$
11. $1,175 = 1,000$
12. $28800 / 85 = 300$
13. $49920 / 96 = 520$
14. $31500 / 21 = 1,500 = 2,000$

Exercise 2.11**A: Solve the following mixed operation problems**

- a. $(8957 \times 5) + 22171 - (19824 \div 24)$
 $= (44785) + 22171 - (826)$
 $= 44785 + 22171 - 826$
 $= 66,130$ **Ans**
- b. $(2145 \times 37) + 472 - (44,000 \div 40)$
 $= 79365 + 472 - 1100$
 $= 78,737$ **Ans**
- c. $(786 \times 26) + 67125 - (64440 \div 12)$
 $= 20436 + 67125 - 5370$
 $= 82,191$ **Ans**
- d. $(4857 \times 9) + 43713 - (52448 \div 16)$
 $= 43713 + 43713 - 3278$
 $= 87,148$ **Ans**



e. $(8957 \times 5) + 22171 - (10725 \div 13)$
 $= 44785 + 22171 - 825$
 $= 66, 131$ **Ans**

f. $(2356 \div 77) + 18987 - (12500 \times 12)$
 $= 30.59 + 18987 - 150000$
 $= -130,982$ **Ans**

Please reconsider the question

g. $(84675 \div 85) + 22107 - (573 \times 63)$
 $= 996.176 + 22107 - 36099$
 $= -12995.824$ **Ans.**

Please reconsider the question

h. $(92,477 / 77) + 20, 888 - (156 \times 122)$
 $= 1201 + 20,888 - 19032$
 $= 3057$ **Ans.**

i. $(44,442 / 54) + 98,172 - (9000 \times 11)$
 $= 823 + 98172 - 99000$
 $= -5$ **Ans.**

Please reconsider the question

j. $(67106 / 89) + 35, 246 - (4, 500 \times 9)$
 $= 754 + 35246 - 40500$
 $= -4500$

Please reconsider the question

k. $22835 + 41165 \div 64 \times 67$
 $= 22835 + 643 \times 67$
 $= 22835 + 43095$
 $= 65930$

l. $33178 + 12780 \div 22 \times 43$
 $= 33178 + 581 \times 43$
 $= 33178 + 24983$
 $= 58161$ **Ans**



$$\begin{aligned} \text{m. } & 63448 + 32446 \div 42 \times 123 \\ & = 63448 + 772.523 \times 123 \\ & = 63448 + 95020 \\ & = 158468.329 \text{ Ans} \end{aligned}$$

$$\begin{aligned} \text{n. } & 84538 + 15000 \div 543 \times 123 \\ & = 84538 + 27.624 \times 123 \\ & = 84538 + 3397.790 \\ & = 87935.70 \text{ Ans} \end{aligned}$$

$$\begin{aligned} \text{o. } & 24538 - 15000 \times 87 \div 336 \\ & = 24538 - 3883.928 \\ & = 28421.92 \text{ Ans} \end{aligned}$$

Solve the following word problems:

1. $392600 / 1208 = 325$
2. $819210 - 658 = 818,552$
3. $12876 \times 785 = 10,107,660$
4. $39486400 / 578 = 68,672$
5. $99999 \times 1000 = 99,999,000$
6. $8656700 / 634 = 13654.10095$, $13654 * 634 = 8656636$, $8656700 - 8656636 = 64$
7. $82434.800 / 826 = 99.8$
8. $999999 \times 10000 = 999,999,000$
9. $1000000 / 111 = 9,009.009$
10. $9600 / 8 = 1200 \times 624 = 748,800$
11. $640000 / 32 = 20000 \times 320 = 6,400,000$
12. $6285 \times 136 = 854,760$
13. $60400 \times 144 = 8,697,600$
14. $160 / 16 = 10 \times 32 = 320$
15. $400 / 25 = 16 \times 65 = 1,040$
16. $50 / 6 = 8.333 \times 60 = 500$
17. $330 - 320 = 10$
18. $50 \times 82.10 = 4,105$
19. $7.500 / 5 = 1.5$
20. $150 \times 5 = 750 + 150 = 900$



End of Chapter exercises:

A: (from left to right)

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B: Find the following products.

a. 8957×5
 $= 44,785$ **Ans**

e. 3504×53
 $= 185,712$ **Ans**

b. 24615×4
 $= 98,460$ **Ans**

f. 2356×77
 $= 181,412$ **Ans**

c. 5972×16
 $= 95,552$ **Ans**

g. 1684×67
 $= 112,828$ **Ans**

d. 780×173
 $= 134,940$ **Ans**

h. 405×527
 $= 213,435$ **Ans**

C: Find the quotient and remainder

1793	632	343	574
42	63	246	20
75341	39872	84538	11480
42	378	738	100
333	207	1073	148
294	189	984	140
394	182	898	80
378	126	738	40
161	56	160	00
126			
35			



$\begin{array}{r} 1035 \\ 42 \overline{) 43493} \\ \underline{42} \\ 149 \\ \underline{126} \\ 233 \\ \underline{210} \\ 23 \end{array}$	$\begin{array}{r} 711 \\ 19 \overline{) 13509} \\ \underline{133} \\ 20 \\ \underline{19} \\ 19 \\ \underline{19} \\ 00 \end{array}$	$\begin{array}{r} 404 \\ 37 \overline{) 14948} \\ \underline{148} \\ 148 \\ \underline{148} \\ 000 \end{array}$	$\begin{array}{r} 294 \\ 54 \overline{) 15876} \\ \underline{108} \\ 507 \\ \underline{486} \\ 216 \\ \underline{216} \\ 000 \end{array}$
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D: solve the word problems:

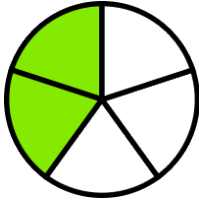
1. $45200 + 42115 = 87,315$
2. $67552 + 31314 = 98,866$
3. $4239 + 2556 = 6,795$
4. $1260 \times 75 = 94,500$
5. $6033 + 5780 = 11,813$
6. $2025 / 75 = 27$
7. $86 \times 9 = 774$
8. $96 / 12 = 8$
9. $1900 / 38 = 50$
10. $256 / 8 = 32$
11. $2650 / 10 = 265$
12. $455 / 5 = 91$



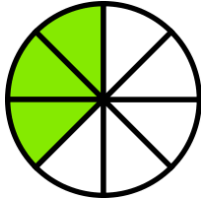
Chapter 3: Fractions

Exercise 3.1:

A. Make Diagram for each of the following fractions



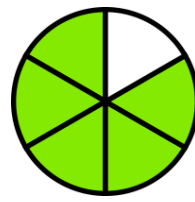
$$\frac{5}{2}$$



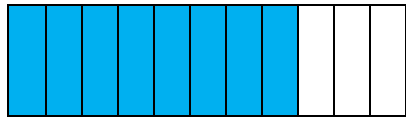
$$\frac{8}{3}$$



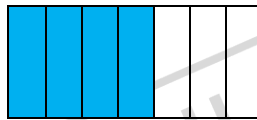
$$\frac{3}{1}$$



$$\frac{6}{5}$$



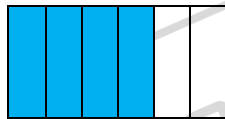
$$\frac{11}{8}$$



$$\frac{7}{4}$$



$$\frac{9}{3}$$



$$\frac{6}{4}$$

B. Convert the following fractions into whole numbers

a. $\frac{18}{3} = 6$

b. $\frac{36}{6} = 6$

c. $\frac{16}{4} = 4$

d. $\frac{48}{6} = 8$

e. $\frac{81}{9} = 9$

f. $\frac{48}{6} = 8$

g. $\frac{39}{13} = 3$

h. $\frac{24}{12} = 2$

i. $\frac{49}{7} = 7$

j. $\frac{50}{10} = 5$

C. Convert the following mixed fractions into improper fractions

a. $2\frac{1}{8} = \frac{17}{8}$

b. $6\frac{1}{3} = \frac{19}{3}$

c. $5\frac{1}{2} = \frac{11}{2}$

d. $7\frac{2}{4} = \frac{30}{4}$

e. $4\frac{3}{5} = \frac{23}{5}$

f. $3\frac{4}{9} = \frac{31}{9}$

g. $15\frac{3}{2} = \frac{33}{2}$

h. $2\frac{3}{11} = \frac{25}{11}$



D. Simplify the following fractions

a. $\frac{20}{6} = \frac{10}{3}$

b. $\frac{30}{15} = \frac{10}{5} = \frac{2}{1} = 2$

c. $\frac{54}{36} = \frac{27}{18} = \frac{9}{6} = \frac{3}{2}$

d. $\frac{64}{56} = \frac{32}{28} = \frac{16}{14} = \frac{8}{7}$

e. $\frac{81}{18} = \frac{27}{6} = \frac{9}{2}$

f. $\frac{28}{7} = \frac{4}{1} = 4$

g. $\frac{12}{9} = \frac{4}{3}$

h. $\frac{49}{35} = \frac{7}{5}$

i. $\frac{48}{24} = \frac{24}{12} = \frac{12}{6} = \frac{6}{3} = \frac{2}{1} = 2$

j. $\frac{39}{26} = \frac{3}{2}$

E. Simplify the following fractions

a. $\frac{3}{9} = \frac{1}{3}$

b. $\frac{4}{12} = \frac{2}{6} = \frac{1}{3}$

c. $\frac{10}{25} = \frac{2}{5}$

d. $\frac{7}{14} = \frac{1}{2}$



e. $\frac{16}{24} = \frac{8}{12} = \frac{4}{6} = \frac{2}{3}$

f. $\frac{12}{20} = \frac{6}{10} = \frac{3}{5}$

g. $\frac{15}{25} = \frac{3}{5}$

h. $\frac{21}{27} = \frac{7}{9}$

i. $\frac{26}{39} = \frac{2}{3}$

j. $\frac{44}{77} = \frac{4}{7}$

k. $\frac{64}{16} = \frac{32}{8} = \frac{16}{4} = \frac{8}{2} = \frac{4}{1} = 4$

l. $\frac{48}{6} = \frac{24}{3} = \frac{8}{1} = 8$

m. $\frac{51}{17} = \frac{3}{1}$

n. $\frac{36}{39} = \frac{12}{13}$

o. $\frac{18}{3} = \frac{6}{1} = 6$

F. Convert Improper fractions to mixed Numbers

a. $\frac{7}{3} = 2\frac{1}{3}$

b. $\frac{36}{7} = 5\frac{1}{7}$

c. $\frac{44}{10} = 4\frac{4}{10}$

d. $\frac{59}{8} = 7\frac{3}{8}$



e. $\frac{13}{2} = 6\frac{1}{2}$

f. $\frac{27}{6} = 4\frac{3}{6}$

g. $\frac{56}{9} = 6\frac{2}{9}$

h. $\frac{58}{9} = 6\frac{4}{9}$

i. $\frac{11}{4} = 2\frac{3}{4}$

j. $\frac{44}{6} = 7\frac{2}{6}$

k. $\frac{11}{2} = 5\frac{1}{2}$

l. $\frac{15}{7} = 2\frac{1}{7}$

m. $\frac{17}{4} = 4\frac{1}{4}$

n. $\frac{26}{5} = 5\frac{1}{5}$

o. $\frac{20}{7} = 2\frac{6}{7}$

Exercise 3.2:**1. Fill in the Blank and solve them with the help equivalent rules:**

a. 18

b. 12

c. 72

d. 2

e. 27

f. 12

g. 7

h. 6

i. 8

j. 8

k. 15

l. 45

m. 15

n. 27

2. Fill in the blank and simplifying the given equivalent fraction.

- a. 20
b. 9
c. 24
d. 18
e. 3
f. 12
g. 20

- h. 15
i. 9
j. 8
k. 21
l. 18
m. 4
n. 21

3. Solve the following fractions with diagrams

1a. $12/2 = 6/1$

1b. $4/8 = \frac{1}{2}$

2a. $15/5 = 3/1$

2b. $14/6 = 7/3$

3a. $2/4 = \frac{1}{2}$

3b. $8/1 = 16/2$

4a. $12/8 = 3/2$

4b. $4/8 = \frac{1}{2}$

5a. $4/10 = 2/5$

5b. $2/16 = 1/8$

Exercise 3.3**A: Compare the following fractions by writing appropriate sign (<,>=) between them**

a. \leq b. \leq c. \leq d. \leq e. \geq f. \leq g. \geq h. \leq i. \leq

B: Compare the following fractions by writing appropriate sign (<,>=) between them

a. \leq b. \geq c. \geq d. \leq e. \leq f. \leq g. \leq h. \leq i. \geq

C: Compare the following fractions by writing appropriate sign (<,>=) between them

a. \leq b. $=$ c. \leq d. \leq e. \geq f. \geq g. \geq h. \geq i. \leq j. \geq k. \leq l. \geq



Exercise 3.4

A. Use the fractions strips to order the following fractions from least to greatest.

- a. $\frac{3}{8}, \frac{1}{2}, \frac{4}{6}$
- b. $\frac{4}{8}, \frac{2}{3}, \frac{3}{4}$
- c. $\frac{2}{3}, \frac{5}{6}, \frac{7}{8}$
- d. $\frac{5}{8}, \frac{4}{6}, \frac{3}{4}$
- e. $\frac{1}{4}, \frac{6}{8}, \frac{3}{4}$
- f. $\frac{3}{8}, \frac{2}{4}, \frac{2}{3}$
- g. $\frac{4}{8}, \frac{4}{6}, \frac{3}{4}$
- h. $\frac{4}{9}, \frac{1}{2}, \frac{4}{4}$
- i. $\frac{1}{2}, \frac{9}{11}, \frac{8}{9}$
- j. $\frac{3}{11}, \frac{7}{11}, \frac{3}{3}$
- k. $\frac{7}{9}, \frac{9}{11}, \frac{6}{7}$
- l. $\frac{11}{21}, \frac{12}{22}, \frac{22}{12}$

B: Order the fractions from greatest to least

- a. $\frac{8}{9}, \frac{9}{11}, \frac{1}{2}$
- b. $\frac{12}{12}, \frac{5}{12}, \frac{1}{12}$
- c. $\frac{4}{4}, \frac{1}{2}, \frac{4}{9}$
- d. $\frac{3}{3}, \frac{7}{11}, \frac{3}{11}$
- e. $\frac{4}{9}, \frac{1}{2}, \frac{5}{4}$
- f. $\frac{11}{6}, \frac{5}{6}, \frac{7}{11}$
- g. $\frac{6}{4}, \frac{3}{4}, \frac{2}{4}$
- h. $\frac{10}{9}, \frac{7}{7}, \frac{2}{5}$
- i. $\frac{12}{1}, \frac{11}{1}, \frac{1}{1}$
- j. $\frac{1}{2}, \frac{1}{3}, \frac{1}{10}$
- k. $\frac{12}{6}, \frac{5}{7}, \frac{12}{6}$
- l. $\frac{5}{2}, \frac{5}{9}, \frac{2}{5}$



Exercise 3.5:

A: Simplify the following fractions by addition method.

$$\begin{aligned} \text{a. } & \frac{2}{7} + \frac{6}{7} \\ & = \frac{2+6}{7} \\ & = \frac{8}{7} = \\ & = 1\frac{1}{7} \end{aligned}$$

$$\begin{aligned} \text{b. } & \frac{11}{13} + \frac{12}{13} \\ & = \frac{11+12}{13} \\ & = \frac{23}{13} = 1\frac{10}{13} \end{aligned}$$

$$\begin{aligned} \text{c. } & \frac{8}{12} + \frac{1}{2} \\ & = \frac{8 \times 1}{12 \times 1} + \frac{1 \times 6}{2 \times 6} \\ & = \frac{8}{12} + \frac{6}{12} = \frac{8+6}{12} = \frac{14}{12} = \frac{7}{6} = 1\frac{1}{6} \end{aligned}$$

$$\begin{aligned} \text{d. } & \frac{7}{9} + \frac{3}{4} \\ & = \frac{7 \times 4}{9 \times 4} + \frac{3 \times 9}{4 \times 9} \\ & = \frac{28}{36} + \frac{27}{36} = \frac{28+27}{36} = \frac{55}{36} = 1\frac{19}{36} \end{aligned}$$

$$\begin{aligned} \text{e. } & \frac{2}{12} + \frac{3}{4} + \frac{1}{2} \\ & = \frac{2 \times 1}{12 \times 1} + \frac{3 \times 3}{4 \times 3} + \frac{1 \times 6}{2 \times 6} \\ & = \frac{2}{12} + \frac{9}{12} + \frac{6}{12} = \frac{2+9+6}{12} = \frac{17}{12} = 1\frac{5}{12} \end{aligned}$$



$$\begin{aligned} \text{f. } & \frac{3}{9} + \frac{2}{3} + \frac{1}{6} \\ & = \frac{3 \times 2}{9 \times 2} + \frac{2 \times 6}{3 \times 6} + \frac{1 \times 3}{6 \times 3} \\ & = \frac{6}{18} + \frac{12}{18} + \frac{3}{18} \\ & = \frac{6+12+3}{18} \\ & = \frac{21}{18} \\ & = \frac{7}{6} \\ & = 1\frac{1}{6} \end{aligned}$$

$$\begin{aligned} \text{g. } & \frac{3}{6} + \frac{7}{9} + \frac{1}{2} \\ & = \frac{3 \times 3}{6 \times 3} + \frac{7 \times 2}{9 \times 2} + \frac{1 \times 9}{2 \times 9} \\ & = \frac{9}{18} + \frac{14}{18} + \frac{9}{18} \\ & = \frac{9+14+9}{18} \\ & = \frac{32}{18} \\ & = \frac{16}{9} \\ & = 1\frac{7}{9} \end{aligned}$$

$$\begin{aligned} \text{h. } & \frac{7}{8} + \frac{1}{5} + \frac{5}{6} \\ & = \frac{7 \times 15}{8 \times 15} + \frac{1 \times 24}{5 \times 24} + \frac{5 \times 20}{6 \times 20} \\ & = \frac{105}{120} + \frac{24}{120} + \frac{100}{120} \\ & = \frac{105 + 24 + 100}{120} \\ & = \frac{229}{120} \\ & = 1\frac{109}{120} \end{aligned}$$

$$\begin{aligned} \text{i. } & \frac{6}{9} + \frac{4}{24} \\ & = \frac{6 \times 8}{9 \times 8} + \frac{4 \times 3}{24 \times 3} \\ & = \frac{48}{72} + \frac{12}{72} \\ & = \frac{48+12}{72} \\ & = \frac{60}{72} \\ & = \frac{30}{36} \\ & = \frac{15}{18} \\ & = \frac{5}{6} \end{aligned}$$

$$\begin{aligned} \text{j. } & \frac{1}{24} + \frac{2}{7} + \frac{4}{18} \\ & = \frac{1 \times 21}{24 \times 21} + \frac{2 \times 72}{7 \times 72} + \frac{4 \times 28}{18 \times 28} \\ & = \frac{21}{504} + \frac{144}{504} + \frac{112}{504} \\ & = \frac{21+144+112}{504} \\ & = \frac{277}{504} \end{aligned}$$

$$\begin{aligned} \text{k. } & \frac{11}{16} + \frac{1}{2} \\ & = \frac{11 \times 1}{16 \times 1} + \frac{1 \times 8}{2 \times 8} \\ & = \frac{11}{16} + \frac{8}{16} \\ & = \frac{11+8}{16} \\ & = \frac{19}{16} \\ & = 1\frac{3}{16} \end{aligned}$$

$$\begin{aligned} \text{l. } & \frac{9}{33} + \frac{7}{11} \\ & = \frac{9 \times 1}{33 \times 1} + \frac{7 \times 3}{11 \times 3} \\ & = \frac{9}{33} + \frac{21}{33} \\ & = \frac{9+21}{33} \\ & = \frac{30}{33} \\ & = \frac{10}{11} \end{aligned}$$



B : Simplify the following fractions by addition method.

a. $\frac{53}{8} + \frac{14}{7}$

$$= \frac{53}{8} + \frac{2}{1}$$

$$= \frac{53 \times 1}{8 \times 1} + \frac{2 \times 8}{1 \times 8}$$

$$= \frac{53}{8} + \frac{16}{8}$$

$$= \frac{53+16}{8}$$

$$= \frac{69}{8}$$

$$= 8\frac{5}{8}$$

b. $\frac{91}{9} + \frac{102}{4}$

$$= \frac{91}{9} + \frac{102}{4}$$

$$= \frac{91 \times 4}{9 \times 4} + \frac{102 \times 9}{4 \times 9}$$

$$= \frac{364}{36} + \frac{918}{36}$$

$$= \frac{364+918}{36}$$

$$= \frac{1282}{36}$$

$$= \frac{641}{18}$$

$$= 35\frac{11}{18}$$

c. $\frac{51}{6} + \frac{45}{24}$



$$= \frac{51 \times 4}{6 \times 4} + \frac{45 \times 1}{24 \times 1}$$

$$= \frac{204}{24} + \frac{45}{24}$$

$$= \frac{204+45}{24}$$

$$= \frac{249}{24}$$

$$= \frac{83}{8}$$

$$= 10\frac{3}{8}$$

d. $\frac{54}{20} + \frac{104}{6}$

$$= \frac{54 \times 3}{20 \times 3} + \frac{104 \times 10}{6 \times 10}$$

$$= \frac{162}{60} + \frac{1040}{60}$$

$$= \frac{162+1040}{60}$$

$$= \frac{1202}{60}$$

$$= \frac{601}{30}$$

$$= 20\frac{1}{30}$$

e. $\frac{81}{2} + \frac{71}{3} + \frac{98}{10}$

$$= \frac{81 \times 15}{2 \times 15} + \frac{71 \times 10}{3 \times 10} + \frac{98 \times 3}{10 \times 3}$$

$$= \frac{1215}{30} + \frac{710}{30} + \frac{294}{30}$$

$$= \frac{1215 + 710 + 294}{30}$$



$$= \frac{2219}{30}$$

$$= 73\frac{29}{30}$$

$$f. \frac{82}{8} + \frac{84}{20} + \frac{41}{4}$$

$$= \frac{82 \times 5}{8 \times 5} + \frac{84 \times 2}{20 \times 2} + \frac{41 \times 10}{4 \times 10}$$

$$= \frac{410}{40} + \frac{168}{40} + \frac{410}{40}$$

$$= \frac{410 + 168 + 410}{40}$$

$$= \frac{988}{40}$$

$$= \frac{247}{10}$$

$$= 24\frac{7}{10}$$

$$g. \frac{99}{24} + \frac{52}{5} + \frac{98}{12}$$

$$= \frac{99}{24} + \frac{52}{5} + \frac{49}{6}$$

$$= \frac{99 \times 5}{24 \times 5} + \frac{52 \times 24}{5 \times 24} + \frac{49 \times 20}{6 \times 20}$$

$$= \frac{495}{120} + \frac{1248}{120} + \frac{980}{120}$$

$$= \frac{495 + 1248 + 980}{120}$$

$$= \frac{2723}{120}$$

$$= 22\frac{83}{120}$$



$$\begin{aligned} \text{h. } & \frac{104}{6} + \frac{43}{4} + \frac{71}{18} \\ & = \frac{104 \times 6}{6 \times 6} + \frac{43 \times 9}{4 \times 9} + \frac{71 \times 2}{18 \times 2} \\ & = \frac{624}{36} + \frac{387}{36} + \frac{142}{36} \\ & = \frac{624+387+142}{36} \\ & = \frac{1153}{36} \\ & = 32\frac{1}{36} \end{aligned}$$

$$\begin{aligned} \text{i. } & \frac{53}{7} + \frac{31}{2} \\ & = \frac{53 \times 2}{7 \times 2} + \frac{31 \times 7}{2 \times 7} \\ & = \frac{106}{14} + \frac{217}{14} \\ & = \frac{106+217}{14} \\ & = \frac{323}{14} \\ & = 23\frac{1}{14} \end{aligned}$$

$$\begin{aligned} \text{j. } & \frac{98}{12} + \frac{67}{12} + \frac{21}{4} \\ & = \frac{98 \times 1}{12 \times 1} + \frac{67 \times 1}{12 \times 1} + \frac{21 \times 3}{4 \times 3} \\ & = \frac{98}{12} + \frac{67}{12} + \frac{63}{12} \end{aligned}$$



$$= \frac{98+67+63}{12}$$

$$= \frac{228}{12}$$

$$= 19$$

k. $\frac{22}{7} + \frac{91}{21}$

$$= \frac{22 \times 3}{7 \times 3} + \frac{91 \times 1}{21 \times 1}$$

$$= \frac{66}{21} + \frac{91}{21}$$

$$= \frac{66+91}{21}$$

$$= \frac{157}{21}$$

$$= 7\frac{10}{21}$$

l. $\frac{87}{13} + \frac{99}{39}$

$$= \frac{87 \times 3}{13 \times 3} + \frac{99 \times 1}{39 \times 1}$$

$$= \frac{261}{39} + \frac{99}{39}$$

$$= \frac{261+99}{39}$$

$$= \frac{360}{39}$$

$$= \frac{120}{13}$$

$$= 9\frac{3}{13}$$

Exercise 3.6**A. Simplify the following fractions by addition method.**

a. $\frac{4}{10} - \frac{1}{5}$

$$= \frac{4 \times 1}{10 \times 1} - \frac{1 \times 2}{5 \times 2}$$

$$= \frac{4}{10} - \frac{2}{10}$$

$$= \frac{4-2}{10}$$

$$= \frac{2}{10}$$

$$= \frac{1}{5}$$

b. $\frac{12}{24} - \frac{3}{8}$

$$= \frac{1}{2} - \frac{3}{8}$$

$$= \frac{1 \times 4}{2 \times 4} - \frac{3 \times 1}{8 \times 1}$$

$$= \frac{4}{8} - \frac{3}{8}$$

$$= \frac{4-3}{8}$$

$$= \frac{1}{8}$$

c. $\frac{3}{6} - \frac{2}{12}$

$$= \frac{3}{6} - \frac{1}{6}$$

$$= \frac{3 \times 1}{6 \times 1} - \frac{1 \times 1}{6 \times 1}$$

$$= \frac{3}{6} - \frac{1}{6}$$



$$= \frac{3-1}{6}$$

$$= \frac{2}{6}$$

$$= \frac{1}{3}$$

d. $\frac{7}{8} - \frac{5}{40}$

$$= \frac{7 \times 5}{8 \times 5} - \frac{5 \times 1}{40 \times 1}$$

$$= \frac{35}{40} - \frac{5}{40}$$

$$= \frac{35-5}{40}$$

$$= \frac{30}{40}$$

$$= \frac{3}{4}$$

e. $\frac{6}{7} - \frac{5}{9} + \frac{1}{2}$

$$= \frac{6 \times 18}{7 \times 18} - \frac{5 \times 14}{9 \times 14} + \frac{1 \times 63}{2 \times 63}$$

$$= \frac{108}{126} - \frac{70}{126} + \frac{63}{126}$$

$$= \frac{108-70+63}{126}$$

$$= \frac{101}{126}$$

f. $\frac{5}{14} - \frac{1}{3} + \frac{1}{6}$

$$= \frac{5 \times 3}{14 \times 3} - \frac{1 \times 14}{3 \times 14} + \frac{1 \times 7}{6 \times 7}$$

$$= \frac{15}{42} - \frac{14}{42} + \frac{7}{42}$$

$$= \frac{15 - 14 + 7}{42}$$

$$= \frac{8}{42}$$

g. $\frac{2}{5} - \frac{1}{4} + \frac{1}{2}$

$$= \frac{2 \times 4}{5 \times 4} - \frac{1 \times 5}{4 \times 5} + \frac{1 \times 10}{2 \times 10}$$

$$= \frac{8}{20} - \frac{5}{20} + \frac{10}{20}$$

$$= \frac{8 - 5 + 10}{20}$$

$$= \frac{13}{20}$$

h. $\frac{7}{8} - \frac{1}{5} + \frac{5}{6}$

$$= \frac{7 \times 15}{8 \times 15} - \frac{1 \times 24}{5 \times 24} + \frac{5 \times 20}{6 \times 20}$$

$$= \frac{105}{120} - \frac{24}{120} + \frac{100}{120}$$

$$= \frac{105 - 24 + 100}{120}$$

$$= \frac{181}{120}$$

$$= 1\frac{61}{120}$$



$$i. \frac{4}{8} - \frac{4}{32}$$

$$= \frac{4}{8} - \frac{1}{8}$$

$$= \frac{4-1}{8}$$

$$= \frac{3}{8}$$

$$j. \frac{5}{18} - \frac{2}{15} + \frac{4}{18}$$

$$= \frac{5 \times 5}{18 \times 5} - \frac{2 \times 6}{15 \times 6} + \frac{4 \times 5}{18 \times 5}$$

$$= \frac{25}{90} - \frac{12}{90} + \frac{20}{90}$$

$$= \frac{25-12+20}{90}$$

$$= \frac{33}{90}$$

$$= \frac{11}{30}$$

$$k. \frac{21}{51} - \frac{5}{17}$$

$$= \frac{21 \times 1}{51 \times 1} - \frac{5 \times 3}{17 \times 3}$$

$$= \frac{21}{51} - \frac{15}{51}$$

$$= \frac{21-15}{51}$$

$$= \frac{6}{51}$$

$$= \frac{2}{17}$$



$$\begin{aligned} \text{i. } & \frac{3}{16} - \frac{11}{64} \\ & = \frac{3 \times 4}{16 \times 4} - \frac{11 \times 1}{64 \times 1} \\ & = \frac{12}{64} - \frac{11}{64} \\ & = \frac{1}{64} \end{aligned}$$

B. Simplify the following fractions by addition method.

$$\begin{aligned} \text{a. } & 5\frac{1}{6} - 2\frac{1}{3} \\ & = \frac{31}{6} - \frac{7}{2} \\ & = \frac{31 \times 1}{6 \times 1} - \frac{7 \times 3}{2 \times 3} \\ & = \frac{31-21}{6} \\ & = \frac{10}{6} \\ & = \frac{5}{3} \\ & = 1\frac{2}{3} \end{aligned}$$

$$\begin{aligned} \text{b. } & 7\frac{2}{5} - 1\frac{1}{5} \\ & = \frac{37}{5} - \frac{6}{5} \\ & = \frac{37-6}{5} \\ & = \frac{31}{5} \\ & = 6\frac{1}{5} \end{aligned}$$



$$\begin{aligned} \text{c. } & 5\frac{2}{3} - 2\frac{1}{2} \\ & = \frac{17}{3} - \frac{5}{2} \\ & = \frac{17 \times 2}{3 \times 2} - \frac{5 \times 3}{2 \times 3} \\ & = \frac{34}{6} - \frac{15}{6} \\ & = \frac{34 - 15}{6} \\ & = \frac{19}{6} \\ & = 3\frac{1}{6} \end{aligned}$$

$$\begin{aligned} \text{d. } & 6\frac{5}{6} - 2\frac{1}{3} \\ & = \frac{41}{6} - \frac{7}{3} \\ & = \frac{41 \times 1}{6 \times 1} - \frac{7 \times 2}{3 \times 2} \\ & = \frac{41}{6} - \frac{14}{6} \\ & = \frac{41 - 14}{6} \\ & = \frac{27}{6} \\ & = \frac{9}{2} \\ & = 4\frac{1}{2} \end{aligned}$$



e. $10\frac{1}{3} - 1\frac{2}{3}$

$$= \frac{31}{3} - \frac{5}{3}$$

$$= \frac{31-5}{3}$$

$$= \frac{26}{3}$$

$$= 8\frac{2}{3}$$

f. $8\frac{1}{3} - 6\frac{2}{3}$

$$= \frac{25}{3} - \frac{20}{3}$$

$$= \frac{25-20}{3}$$

$$= \frac{5}{3}$$

$$= 1\frac{2}{3}$$

g. $9\frac{4}{9} - 7\frac{7}{9}$

$$= \frac{85}{9} - \frac{70}{9}$$

$$= \frac{85-70}{9}$$

$$= \frac{15}{9}$$

$$= \frac{5}{3}$$

$$= 1\frac{2}{3}$$

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$$\text{h. } 8\frac{4}{10} - 4\frac{8}{10}$$

$$= \frac{84}{10} - \frac{48}{10}$$

$$= \frac{84-48}{10}$$

$$= \frac{36}{10}$$

$$= \frac{18}{5}$$

$$= 3\frac{3}{5}$$

$$\text{i. } 1\frac{10}{11} - 5\frac{1}{3}$$

$$= \frac{21}{11} - \frac{16}{3}$$

$$= \frac{21 \times 3}{11 \times 3} - \frac{16 \times 11}{3 \times 11}$$

$$= \frac{61}{33} - \frac{176}{33}$$

$$= \frac{61-176}{33}$$

$$= \frac{-115}{33}$$

$$\text{j. } 9\frac{8}{12} - 6\frac{7}{12}$$

$$= \frac{116}{12} - \frac{79}{12}$$

$$= \frac{116-79}{12}$$



$$= \frac{37}{12}$$

$$= 3\frac{1}{12}$$

k. $3\frac{3}{2} - 3\frac{3}{7}$

$$= \frac{9}{2} - \frac{24}{7}$$

$$= \frac{9 \times 7}{2 \times 7} - \frac{24 \times 2}{7 \times 2}$$

$$= \frac{63}{14} - \frac{48}{14}$$

$$= \frac{63-48}{14}$$

$$= \frac{15}{14}$$

$$= 1\frac{1}{14}$$

l. $2\frac{6}{7} - 3\frac{5}{21}$

$$= \frac{20}{7} - \frac{68}{21}$$

$$= \frac{20 \times 3}{7 \times 3} - \frac{68 \times 1}{21 \times 1}$$

$$= \frac{60}{21} - \frac{68}{21}$$

$$= \frac{60-68}{21}$$

$$= \frac{-8}{21}$$

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Exercise 3.7**A. Simplify the following fractions by Multiplication.**

$$\begin{aligned} \text{a. } & \frac{4}{10} \times \frac{5}{1} \\ & = \frac{4}{10} \times \frac{5}{1} \\ & = \frac{4 \times 5}{10 \times 1} \\ & = \frac{20}{10} \\ & = \frac{2}{1} \\ & = 2 \end{aligned}$$

$$\begin{aligned} \text{b. } & \frac{12}{3} \times \frac{3}{3} \\ & = \frac{12 \times 3}{3 \times 3} \\ & = \frac{36}{9} \\ & = \frac{4}{1} = 4 \end{aligned}$$

$$\begin{aligned} \text{c. } & \frac{3}{6} \times \frac{8}{2} \\ & = \frac{1}{2} \times \frac{4}{1} \\ & = \frac{1 \times 4}{2 \times 1} \\ & = \frac{4}{2} \\ & = \frac{2}{1} = 2 \end{aligned}$$



$$\begin{aligned} \text{d. } & \frac{8}{8} \times \frac{8}{4} \\ & = \frac{1}{1} \times \frac{2}{1} \\ & = \frac{1 \times 2}{1 \times 1} \\ & = 2 \end{aligned}$$

$$\begin{aligned} \text{e. } & \frac{7}{5} \times \frac{5}{6} \\ & = \frac{7 \times 5}{5 \times 6} \\ & = \frac{7}{6} \end{aligned}$$

$$\begin{aligned} \text{f. } & \frac{12}{6} \times \frac{4}{7} \\ & = \frac{2}{1} \times \frac{4}{7} \\ & = \frac{2 \times 4}{1 \times 7} \\ & = \frac{8}{7} \end{aligned}$$

$$\begin{aligned} \text{g. } & \frac{6}{6} \times \frac{4}{1} \\ & = \frac{1}{1} \times 4 \\ & = 4 \end{aligned}$$

$$\text{h. } \frac{8}{6} \times \frac{5}{5}$$

$$= \frac{4}{3} \times \frac{1}{1}$$

$$= \frac{4}{3}$$

i. $\frac{1}{8} \times \frac{12}{4}$

$$= \frac{1}{8} \times \frac{3}{1}$$

$$= \frac{1 \times 3}{8 \times 1}$$

$$= \frac{3}{8}$$

j. $\frac{18}{2} \times \frac{2}{9}$

$$= \frac{9}{1} \times \frac{2}{9}$$

$$= \frac{9 \times 2}{1 \times 9}$$

$$= \frac{18}{9}$$

$$= \frac{2}{1} = 2$$

k. $\frac{3}{8} \times \frac{2}{7}$

$$= \frac{3 \times 2}{8 \times 7}$$

$$= \frac{3 \times 1}{4 \times 7}$$

$$= \frac{3}{28}$$



$$\begin{aligned} \text{i. } & \frac{7}{6} \times \frac{3}{5} \\ & = \frac{7 \times 3}{6 \times 5} \\ & = \frac{7 \times 1}{2 \times 5} \\ & = \frac{7}{10} \end{aligned}$$

B. Simplify the following fractions by addition method.

$$\begin{aligned} \text{a. } & 5\frac{1}{5} \times 3\frac{3}{7} \\ & = \frac{26}{5} \times \frac{24}{7} \\ & = \frac{26 \times 24}{5 \times 7} \\ & = \frac{624}{35} \\ & = 17\frac{29}{35} \end{aligned}$$

$$\begin{aligned} \text{b. } & 7\frac{2}{5} \times 7\frac{9}{3} \\ & = \frac{37}{5} \times \frac{30}{3} \\ & = \frac{37 \times 30}{5 \times 3} \\ & = \frac{37 \times 10}{5 \times 1} \\ & = \frac{37 \times 2}{1 \times 1} \\ & = \frac{74}{1} \end{aligned}$$



$$\begin{aligned} \text{c. } & 6\frac{2}{3} \times 3\frac{8}{6} \\ & = \frac{20}{3} \times \frac{26}{6} \\ & = \frac{20}{3} \times \frac{13}{3} \\ & = \frac{20 \times 13}{3 \times 3} \\ & = \frac{260}{9} \\ & = 28\frac{8}{9} \\ & = 3\frac{1}{6} \end{aligned}$$

$$\begin{aligned} \text{d. } & 16\frac{5}{8} \times 2\frac{3}{2} \\ & = \frac{133}{8} \times \frac{7}{2} \\ & = \frac{133 \times 7}{8 \times 2} \\ & = \frac{931}{16} \\ & = 58\frac{3}{16} \end{aligned}$$

$$\begin{aligned} \text{e. } & 10\frac{2}{5} \times 8\frac{2}{8} \\ & = \frac{52}{5} \times \frac{66}{8} \\ & = \frac{52}{5} \times \frac{33}{4} \end{aligned}$$



$$= \frac{52 \times 33}{5 \times 4}$$

$$= \frac{13 \times 33}{5 \times 1}$$

$$= \frac{429}{5}$$

$$= 85\frac{4}{5}$$

f. $14\frac{1}{2} \times 4\frac{1}{5}$

$$= \frac{29}{2} \times \frac{21}{5}$$

$$= \frac{29 \times 21}{2 \times 5}$$

$$= \frac{609}{10}$$

$$= 60\frac{9}{10}$$

g. $9\frac{4}{9} \times 3\frac{9}{6}$

$$= \frac{85}{9} \times \frac{27}{6}$$

$$= \frac{85}{9} \times \frac{9}{2}$$

$$= \frac{85 \times 9}{9 \times 2}$$

$$= \frac{85}{2}$$

$$= 42\frac{1}{2}$$



$$\begin{aligned} \text{h. } & 8\frac{4}{12} \times 9\frac{9}{9} \\ & = \frac{100}{12} \times \frac{90}{9} \\ & = \frac{25}{3} \times \frac{10}{1} \\ & = \frac{25 \times 10}{3 \times 1} \\ & = \frac{250}{3} \\ & = 83\frac{1}{3} \end{aligned}$$

$$\begin{aligned} \text{i. } & 1\frac{10}{11} \times 6\frac{5}{6} \\ & = \frac{21}{11} \times \frac{41}{6} \\ & = \frac{21 \times 41}{11 \times 6} \\ & = \frac{7 \times 41}{11 \times 2} \\ & = \frac{287}{22} \\ & = 13\frac{1}{22} \end{aligned}$$

$$\begin{aligned} \text{j. } & 9\frac{8}{12} \times 2\frac{1}{4} \\ & = \frac{116}{12} \times \frac{9}{4} \\ & = \frac{116 \times 9}{12 \times 4} \end{aligned}$$



$$= \frac{29 \times 3}{4 \times 1}$$

$$= \frac{87}{4}$$

$$= 21\frac{3}{4}$$

k. $3\frac{3}{7} \times 3\frac{1}{7}$

$$= \frac{24}{7} \times \frac{22}{7}$$

$$= \frac{24 \times 22}{7 \times 7}$$

$$= \frac{528}{49}$$

$$= 10\frac{38}{49}$$

l. $2\frac{6}{7} \times 4\frac{3}{6}$

$$= \frac{20}{7} \times \frac{27}{6}$$

$$= \frac{20 \times 27}{7 \times 6}$$

$$= \frac{20 \times 9}{7 \times 2}$$

$$= \frac{180}{14}$$

$$= \frac{90}{7} = 12\frac{6}{7}$$

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Exercise 3.8**A. Simplify the following fractions by division Method.**

a. $\frac{4}{10} \div \frac{2}{3}$

$$= \frac{4}{10} \times \frac{3}{2}$$

$$= \frac{4 \times 3}{10 \times 2}$$

$$= \frac{12}{20}$$

$$= \frac{6}{10}$$

$$= \frac{3}{5}$$

b. $\frac{12}{3} \div \frac{3}{3}$

$$= \frac{12 \times 3}{3 \times 3}$$

$$= \frac{36}{9}$$

$$= \frac{4}{1}$$

$$= 4$$

c. $\frac{3}{6} \div \frac{6}{4}$

$$= \frac{3}{6} \times \frac{4}{6}$$

$$= \frac{1}{2} \times \frac{2}{3}$$

$$= \frac{1 \times 2}{2 \times 3}$$

$$= \frac{1}{3}$$

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$$d. \frac{8}{8} \div \frac{4}{8}$$

$$= \frac{8}{8} \times \frac{8}{4}$$

$$= \frac{1}{1} \times \frac{2}{1}$$

$$= \frac{1 \times 2}{1 \times 1}$$

$$= 2$$

$$e. \frac{5}{7} \div \frac{5}{6}$$

$$= \frac{5}{7} \times \frac{6}{5}$$

$$= \frac{5 \times 6}{7 \times 5}$$

$$= \frac{6}{7}$$

$$f. \frac{12}{6} \div \frac{7}{4}$$

$$= \frac{2}{1} \times \frac{4}{7}$$

$$= \frac{2 \times 4}{1 \times 7}$$

$$= \frac{8}{7}$$

$$g. \frac{6}{6} \div \frac{1}{4}$$

$$= \frac{6}{6} \times \frac{4}{1}$$

$$\frac{1}{1} \times 4$$

$$= 4$$



$$\text{h. } \frac{8}{6} \div \frac{5}{5}$$

$$= \frac{4}{3} \times \frac{1}{1}$$

$$= \frac{4}{3}$$

$$\text{i. } \frac{1}{8} \div \frac{4}{32}$$

$$= \frac{1}{8} \times \frac{32}{4}$$

$$= \frac{1}{8} \times \frac{8}{1}$$

$$= \frac{1 \times 8}{8 \times 1}$$

$$= \frac{1}{1}$$

$$\text{j. } \frac{18}{2} \div \frac{9}{18}$$

$$= \frac{18}{2} \times \frac{18}{9}$$

$$= \frac{9 \times 2}{1 \times 1}$$

$$= \frac{18}{1} = 18$$

$$\text{k. } \frac{15}{3} \div \frac{9}{7}$$

$$= \frac{5}{1} \times \frac{7}{9}$$

$$= \frac{5 \times 7}{1 \times 9}$$

$$= \frac{35}{9}$$

$$= 3\frac{8}{9}$$



$$i. \frac{5}{10} \div \frac{45}{90}$$

$$= \frac{1}{2} \times \frac{90}{45}$$

$$= \frac{1}{2} \times \frac{2}{1}$$

$$= \frac{1 \times 2}{2 \times 1}$$

$$= \frac{1}{1}$$

B. Simplify the following fractions by division method.

$$a. 5 \div \frac{5}{4}$$

$$= \frac{5}{1} \times \frac{4}{5}$$

$$= \frac{5 \times 4}{1 \times 5}$$

$$= \frac{4}{1} = 4$$

$$b. 7 \div \frac{4}{2}$$

$$= \frac{7}{1} \times \frac{2}{4}$$

$$= \frac{7 \times 1}{1 \times 2}$$

$$= \frac{7}{2}$$

$$= 3\frac{1}{2}$$

$$c. 6 \div \frac{2}{3}$$

$$= \frac{6}{1} \times \frac{3}{2}$$



$$\begin{aligned} &= \frac{6 \times 3}{1 \times 2} \\ &= \frac{3 \times 3}{1 \times 1} \\ &= \frac{9}{1} = 9 \end{aligned}$$

d. $22 \div \frac{11}{1}$

$$\begin{aligned} &= \frac{22}{1} \times \frac{1}{11} \\ &= \frac{22 \times 1}{1 \times 11} \\ &= \frac{2}{1} = 2 \end{aligned}$$

e. $10 \div 2\frac{2}{5}$

$$\begin{aligned} &= \frac{10}{1} \div \frac{12}{5} \\ &= \frac{10}{1} \times \frac{5}{12} \\ &= \frac{10 \times 5}{1 \times 12} \\ &= \frac{5 \times 5}{1 \times 6} \\ &= \frac{25}{6} \\ &= 4\frac{1}{6} \end{aligned}$$

f. $14 \div \frac{7}{2}$

$$= \frac{14}{1} \times \frac{2}{7}$$



$$= \frac{14 \times 2}{1 \times 7}$$

$$= \frac{2 \times 2}{1 \times 1}$$

$$= \frac{4}{1}$$

g. $9 \div \frac{6}{4}$

$$= \frac{9}{1} \times \frac{4}{6}$$

$$= \frac{9}{1} \times \frac{2}{3}$$

$$= \frac{9 \times 2}{1 \times 3}$$

$$= \frac{3 \times 2}{1 \times 1}$$

$$= \frac{9}{1}$$

h. $8 \div \frac{12}{4}$

$$= \frac{8}{1} \times \frac{4}{12}$$

$$= \frac{8}{1} \times \frac{1}{3}$$

$$= \frac{8 \times 1}{1 \times 3}$$

$$= \frac{8}{3}$$

$$= 2\frac{2}{3}$$

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$$\begin{aligned} \text{i. } 1 \div \frac{18}{10} \\ &= \frac{1}{1} \times \frac{10}{18} \\ &= \frac{10}{18} \\ &= \frac{5}{9} \end{aligned}$$

$$\begin{aligned} \text{j. } 9 \div \frac{9}{8} \\ &= \frac{9}{1} \times \frac{8}{9} \\ &= \frac{9 \times 8}{1 \times 9} \\ &= \frac{8}{1} = 8 \end{aligned}$$

$$\begin{aligned} \text{k. } 9 \div \frac{4}{3} \\ &= \frac{9}{1} \times \frac{3}{4} \\ &= \frac{9 \times 3}{1 \times 4} \\ &= \frac{27}{4} \\ &= 6\frac{3}{4} \end{aligned}$$

$$\begin{aligned} \text{l. } 22 \div \frac{5}{3} \\ &= \frac{22}{1} \times \frac{3}{5} \end{aligned}$$

$$= \frac{22 \times 3}{1 \times 5}$$

$$= \frac{66}{5}$$

$$= 13\frac{1}{5}$$

End of Chapter Exercises:

1. $\frac{1}{3} + \frac{1}{6}$

$$= \frac{1 \times 2}{3 \times 2} + \frac{1}{6}$$

$$= \frac{2}{6} + \frac{1}{6}$$

$$= \frac{2+1}{6}$$

$$= \frac{3}{6}$$

$$= \frac{1}{2}$$

2. $\frac{7}{8} - \frac{1}{2}$

$$= \frac{7}{8} - \frac{1 \times 4}{2 \times 4}$$

$$= \frac{7}{8} - \frac{4}{8}$$

$$= \frac{7-4}{8}$$

$$= \frac{3}{8}$$

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$$\begin{aligned} 3. \quad & \frac{2}{3} + \frac{1}{4} \\ & = \frac{2 \times 4}{3 \times 4} + \frac{1 \times 3}{4 \times 3} \\ & = \frac{8}{12} + \frac{3}{12} \\ & = \frac{8+3}{12} \\ & = \frac{11}{12} \end{aligned}$$

$$\begin{aligned} 4. \quad & \frac{3}{4} + \frac{3}{8} \\ & = \frac{3 \times 2}{4 \times 2} + \frac{3 \times 1}{8 \times 1} \\ & = \frac{6}{8} + \frac{3}{8} \\ & = \frac{6+3}{8} \\ & = \frac{9}{8} \\ & = 1\frac{1}{8} \end{aligned}$$

$$\begin{aligned} 5. \quad & 60 \times \frac{2}{3} - 19 \\ & = \frac{60 \times 2}{1 \times 3} - 19 \\ & = \frac{20 \times 2}{1 \times 1} - \frac{19}{1} \\ & = \frac{40}{1} - \frac{19}{1} \\ & = 21 \end{aligned}$$

$$\begin{aligned} 6. \quad & 125 \times \frac{3}{5} \\ &= \frac{125 \times 3}{1 \times 5} \\ &= \frac{25 \times 3}{1 \times 1} \\ &= \frac{75}{1} = 75 \end{aligned}$$

$$\begin{aligned} 7. \quad & 6 \times \frac{2}{3} \\ &= \frac{6}{1} \times \frac{2}{3} \\ &= \frac{6 \times 2}{1 \times 3} \\ &= \frac{2 \times 2}{1 \times 1} \\ &= \frac{4}{1} = 4 \end{aligned}$$

$$\begin{aligned} 8. \quad & 5 \times \frac{3}{5} + \frac{5}{1} \\ &= \frac{5 \times 3}{1 \times 5} + \frac{5}{1} \\ &= \frac{1 \times 3}{1 \times 1} + \frac{5}{1} \\ &= \frac{3 + 5}{1} \\ &= 8 \end{aligned}$$

$$\begin{aligned} 9. \quad & 24 \times \frac{1}{4} \\ &= \frac{24}{1} \times \frac{1}{4} \end{aligned}$$



$$= \frac{24 \times 1}{1 \times 4}$$

$$= \frac{6 \times 1}{1 \times 1}$$

$$= \frac{6}{1} = 6$$

$$10. 18 \div \frac{2}{3}$$

$$= \frac{18}{1} \times \frac{3}{2}$$

$$= \frac{18 \times 3}{1 \times 2}$$

$$= \frac{9 \times 3}{1 \times 1}$$

$$= 27$$

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Chapter 4 Factors and Multiples

Exercise 4.1

1: a. yes b. yes c. yes d. no e. no f. yes g. no h. yes

2: (From left to right)

- | | | |
|----------|-------|-------|
| 1. 0 R 1 | 3 R 0 | 0 R 6 |
| 2. 0 R 2 | 0 R 1 | 6 R 0 |
| 3. 1 R 0 | 0 R 2 | 0 R 1 |
| 4. 0 R 1 | 4 R 0 | 0 R 2 |
| 5. 0 R 2 | 0 R 1 | 7 R 0 |
| 6. 2 R 0 | 0 R 2 | 0 R 1 |
| 7. 0 R 1 | 5 R 0 | 0 R 1 |
| 8. 0 R 2 | 0 R 1 | 8 R 0 |

Numbers that were exactly divisible by 3: 9, 18, 3, 12, 21, 6, 15, 24

3: (From left to right)

- | | | |
|-----------|--------|--------|
| 1. 0 R 1 | 0 R 1 | 0 R 1 |
| 2. 0 R 2 | 0 R 2 | 0 R 2 |
| 3. 0 R 3 | 0 R 3 | 0 R 3 |
| 4. 0 R 4 | 0 R 4 | 0 R 4 |
| 5. 5 R 0 | 9 R 0 | 11 R 0 |
| 6. 0 R 1 | 0 R 1 | 0 R 1 |
| 7. 0 R 2 | 0 R 2 | 0 R 2 |
| 8. 0 R 3 | 0 R 3 | 0 R 3 |
| 9. 0 R 4 | 0 R 4 | 0 R 4 |
| 10. 8 R 0 | 10 R 0 | 12 R 0 |

Numbers that were exactly divisible by 5: 35, 45, 55, 40, 50, 60



Exercise 4.2

	2	3	4	5
32	yes	No	Yes	No
70	Yes	No	No	Yes
87	No	yes	No	No
34	yes	No	No	No
94	yes	No	No	No
44	yes	No	Yes	No
25	No	No	No	Yes
24	Yes	Yes	Yes	No
15	No	Yes	No	Yes
10	Yes	No	No	Yes
82	Yes	No	No	No
27	No	yes	No	No

B:

1. B, d, f
2. A, b, d, e
3. E, f
4. A, b, d, e
5. D, e
6. B,
7. A,
8. C,
9. None

C:

1. a. no, it is not completely divisible . b. yes, it can completely divisible. C. no
2. a. no, it is not completely divisible.
 b. Yes, it is completely divisible.
 c. No, it is not completely divisible.
 d. No, it is not completely divisible
 e. Yes, it is completely divisible.
 f. Yes, it is completely divisible.
3. a. no b. yes, 14573 (division is given below) c. no



$$\begin{array}{r}
 14573 \\
 3 \overline{) 43719} \\
 \underline{- 3} \\
 13 \\
 \underline{- 12} \\
 17 \\
 \underline{- 15} \\
 21 \\
 \underline{- 21} \\
 9 \\
 \underline{- 9} \\
 0
 \end{array}$$

4. 238,887 can be divisible by 3, last digit is changed.
 5. a. 84 b. 132
 6. a. no b. yes, 64 c. yes, 4898

Division of b

$$\begin{array}{r}
 64 \\
 9 \overline{) 576} \\
 \underline{- 54} \\
 36 \\
 \underline{- 36} \\
 X
 \end{array}$$

Division of c

$$\begin{array}{r}
 4898 \\
 9 \overline{) 44082} \\
 \underline{- 36} \\
 80 \\
 \underline{- 72} \\
 88 \\
 \underline{- 81} \\
 72 \\
 \underline{- 72} \\
 X
 \end{array}$$

7. a. 198, 297, 396, 495, 594
 b. 728, 819, 910, 784, 882

8. a. 6 R 2 b. 26 R 0 c. 7 R 5
 6 R 3 26 R 1 7 R 6
 7 R 0 26 R 2 8 R 0
 7 R 1 27 R 0 8 R 1
 7 R 2 27 R 1 8 R 2
 7 R 3 27 R 2 8 R 3
 8 R 0 28 R 0 8 R 4

9. 1) 589 = no 2) 495 = 3, 5, 9
 558 = 2, 3, 6, 9 3,594 = 2, 3, 6



3) $1,755 = 3, 5, 9$

$298 = 2,$

$4,000 = 2, 4, 5, 8$

$3,270 = 2, 3, 6,$

5) $628 = 2, 4$

$405 = 3, 5, 9$

10. a. 1 b. 2 c. 3

11. a. 1 b. 5 c. 9

12. a. 96 b. 97

13. 32 210

4) $3,548 = 2, 4,$

$277 = \text{no}$

$237 = 3,$

$10,999 = \text{no}$

6) $938 = 2$

$224 = 2, 4, 8$

Exercise 4.3

C: number prime composite factors

10 x ☺ 1,2,5,10

21 x ☺ 1, 3,7, 21

33 x ☺ 1,3,11,33

25 x ☺ 1,5,25

18 x ☺ 1,2,3,6,9,18

73 ☺ x 1,73

15 x ☺ 1,3,5,15

12 x ☺ 1,2,3,4,6,12

88 x ☺ 1, 2,4,8,11,22,44,88

52 x ☺ 1,2,4,13,26, 52

Exercise 4.4

1. a. $2 \times 3 \times 3$ b. 2×3 c. 2×7 d. $2 \times 2 \times 2$ e. $2 \times 2 \times 3$ f. $2 \times 2 \times 5$ g. $2 \times 2 \times 2 \times 2$
 h. $2 \times 2 \times 2 \times 3$ i. $3 \times 3 \times 3$ j. 5×5 k. 3×11 l. 3×5

2. a. $2 \times 3 \times 7$ b. $2 \times 2 \times 2 \times 7$ c. $2 \times 2 \times 17$ d. $3 \times 5 \times 5$ e. 47×1 f. $3 \times 3 \times 11$ g. $2 \times 2 \times 2 \times 3 \times 3$



h. $2 \times 2 \times 2 \times 2 \times 5$ i. 97×1 j. 5×17 k. $2 \times 3 \times 11$ l. 2×41

Exercise 4.5

- A:** 8: 16, 24, 32, 40, 48 15: 30, 45, 60, 75, 90 18: 36, 54, 72, 90, 108
 32: 64, 96, 128, 160, 192 38: 76, 114, 152, 190, 228 44: 88, 132, 176, 220, 264
 25: 50, 75, 100, 125, 150 68: 136, 204, 272, 340, 408 50: 100, 150, 200, 250, 300
 75: 150, 225, 300, 375, 450 21: 42, 63, 84, 105, 126 30: 60, 90, 120, 150, 180
 49: 98, 147, 196, 245, 294 86: 172, 258, 344, 430, 516 24: 48, 72, 96, 120, 144
 92: 184, 276, 368, 460, 552

B: 20, 40

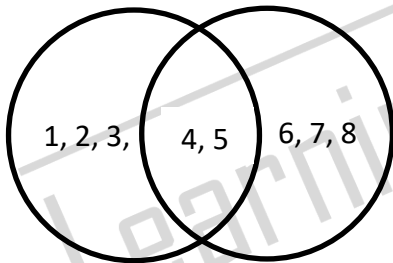
Exercise 4.6

A. Colour the union in A and intersection in B.

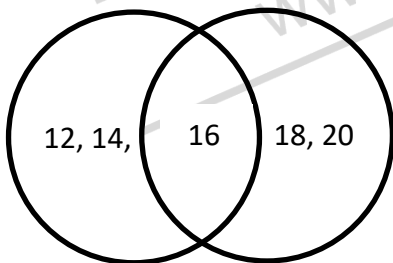
Do as directed

B. Make a Venn diagram of the following:

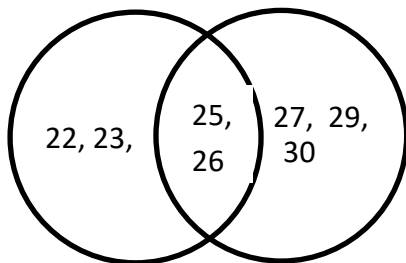
1.



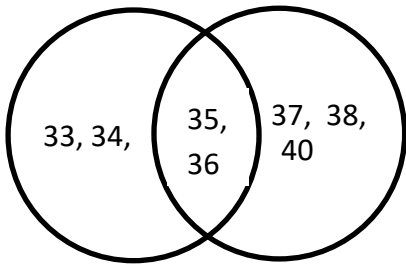
2.



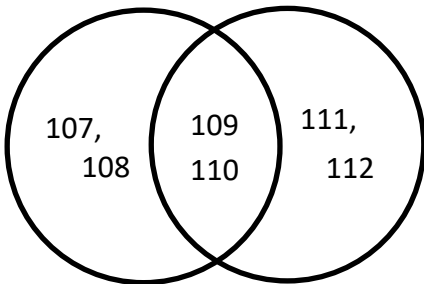
3.



4.



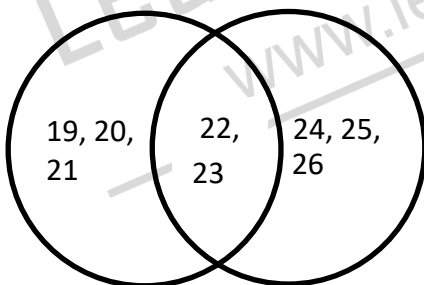
5.



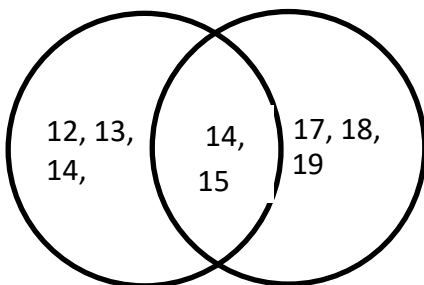
6.



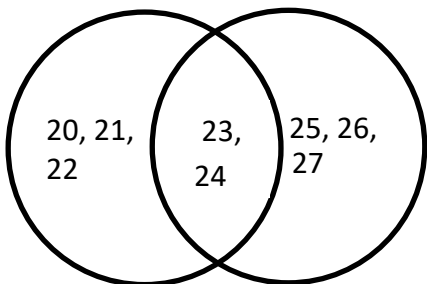
7.



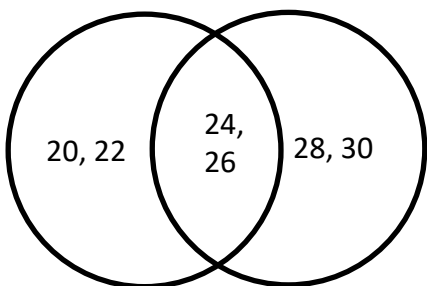
8.



9.

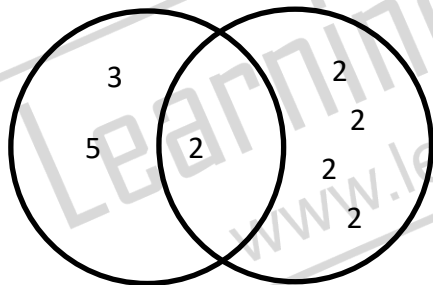


10.

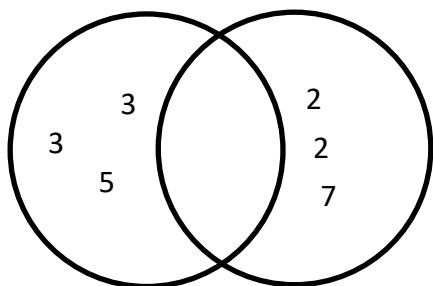


C. Make a Venn diagram with prime and composite factors:

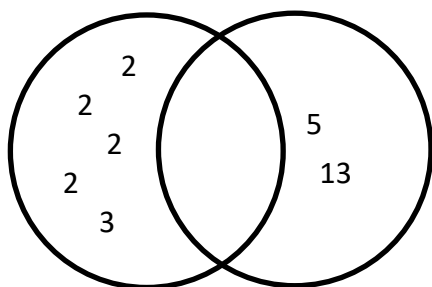
1. 30 and 32



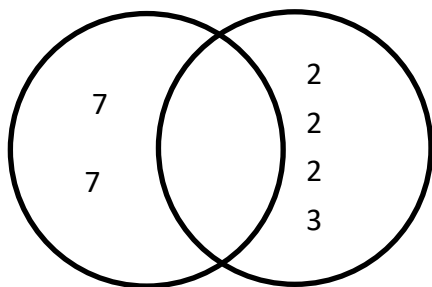
2. 45 and 28



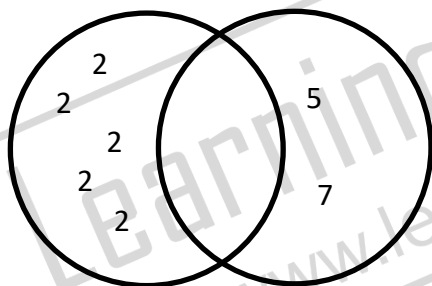
3. 48 and 65



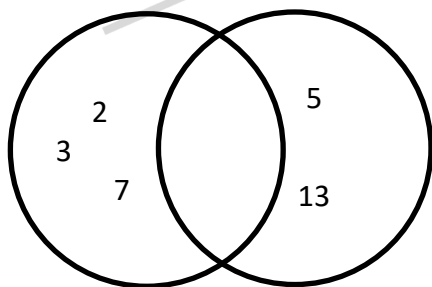
4. 49 and 24



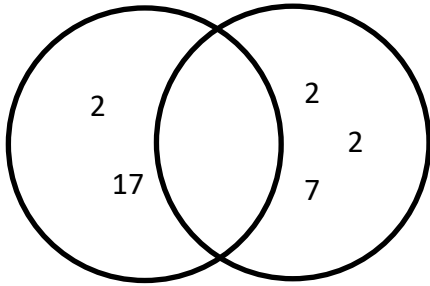
5. 32 and 35



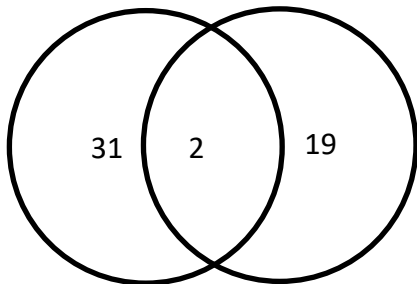
6. 42 and 65



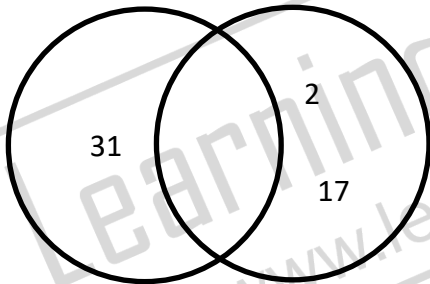
7. 34 and 28



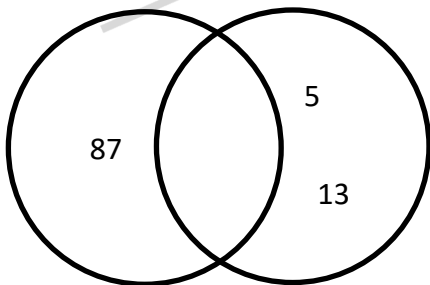
8. 62 and 38



9. 31 and 34



10. 87 and 65



Exercise 4.7

A: Find the LCM by division method.

5	23,35	3	45,59	2	26,32	2	56,28	2	82,95
7	23,7	3	15,59	2	13,18	2	28,14	5	41,95
23	23,1	5	5,59	3	13,9	2	14,7	19	41,19
	1,1	59	1,59	3	13,3	7	7,7	41	41,1
			1,1	13	13,1		1,1		1,1
				1	1,1				

- a) $5 \times 7 \times 23 = 805$
- b) $3 \times 3 \times 5 \times 59 = 2655$
- c) $2 \times 2 \times 3 \times 3 \times 13 = 416$
- d) $2 \times 5 \times 19 \times 41 = 7790$
- e) $2 \times 2 \times 2 \times 7 = 56$

2	54,23	2	87,32	2	12,24	2	62,98	2	43,32
3	27,23	2	87,16	2	6,12	7	31,49	2	43,16
3	9,23	2	87,8	2	3,6	7	31,7	2	43,8
3	3,23	2	87,4	3	3,3	31	31,1	2	43,4
23	1,23	2	87,2	1,1		1,1		2	43,2
	1,1	3	87,1					43	43,1
		29	29,1						1,1

- f) $2 \times 3 \times 3 \times 3 \times 23 = 1242$
- g) $2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 29 = 2784$
- h) $2 \times 2 \times 2 \times 3 = 24$
- i) $2 \times 7 \times 7 \times 31 = 3038$
- j) $2 \times 2 \times 2 \times 2 \times 2 \times 43 = 1376$

B: Find the LCM by Multiplication method.

a) **12 and 16**

$12 = 2 \times 2 \times 3$

$16 = 2 \times 2 \times 2 \times 2$

L.C.M

$2 \times 2 \times 2 \times 2 \times 3 = 48$

b) **10 and 15**

$10 = 2 \times 5$

$15 = 3 \times 5$

L.C.M



$$2 \times 3 \times 5 = 30$$

c) **36 and 42**

$$36 = 2 \times 2 \times 3 \times 3$$

$$42 = 2 \times 3 \times 7$$

L.C.M

$$2 \times 2 \times 3 \times 3 \times 7 = 252$$

d) **25 and 20**

$$25 = 5 \times 5$$

$$20 = 2 \times 2 \times 5$$

L.C.M

$$2 \times 2 \times 5 \times 5 = 100$$

e) **84 and 24**

$$84 = 2 \times 2 \times 3 \times 7$$

$$24 = 2 \times 2 \times 2 \times 3$$

L.C.M

$$2 \times 2 \times 2 \times 3 \times 7 = 168$$

f) **10 and 42**

$$42 = 2 \times 3 \times 7$$

$$10 = 2 \times 5$$

L.C.M

$$2 \times 3 \times 5 \times 7 = 210$$

g) **43 and 64**

$$43 = 43$$

$$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

L.C.M

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 43 = 2752$$

h) **75 and 31**

$$31 = 31$$

$$75 = 3 \times 5 \times 5$$

L.C.M

$$3 \times 5 \times 5 \times 31 = 2325$$



i) **74 and 36**

$$74 = 2 \times 37$$

$$36 = 2 \times 2 \times 3 \times 3$$

L.C.M

$$2 \times 2 \times 3 \times 3 \times 37 = 1332$$

j) **95 and 75**

$$75 = 3 \times 5 \times 5$$

$$95 = 5 \times 19$$

L.C.M

$$3 \times 5 \times 5 \times 19 = 1425$$

C: Solve the following word problems by LCM

1. **18 and 24**

$$18 = 2 \times 3 \times 3$$

$$24 = 2 \times 2 \times 2 \times 3$$

L.C.M

$$2 \times 2 \times 2 \times 3 \times 3 = 72$$

2. **12 and 15**

$$12 = 2 \times 2 \times 3$$

$$15 = 3 \times 5$$

L.C.M

$$2 \times 2 \times 3 \times 5 = 60$$

3. **20,10, and 8**

$$20 = 2 \times 2 \times 5$$

$$10 = 2 \times 5$$

$$8 = 2 \times 2 \times 2$$

L.C.M

$$2 \times 2 \times 2 \times 5 = 40$$

4. **80 and 12**

$$80 = 2 \times 2 \times 2 \times 2 \times 5$$

$$12 = 2 \times 2 \times 3$$

L.C.M

$$2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$$

5. **24 and 32**

$$24 = 2 \times 2 \times 2 \times 3$$

$$32 = 2 \times 2 \times 2 \times 2 \times 2$$

L.C.M

$$2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$$



Exercise 4.8

A: Find the HCF of each pair.

a) 9 and 15

$$9 = 3 \times 3$$

$$15 = 3 \times 5$$

H.C.F

$$3 = 3$$

b) 24 and 39

$$24 = 2 \times 2 \times 2 \times 3$$

$$39 = 3 \times 13$$

H.C.F

$$3 = 3$$

c) 36 and 60

$$36 = 2 \times 2 \times 3 \times 3$$

$$60 = 2 \times 2 \times 3 \times 5$$

H.C.F

$$2 \times 2 \times 3 = 12$$

d) 25 and 20

$$25 = 5 \times 5$$

$$20 = 2 \times 2 \times 5$$

H.C.F

$$5 = 5$$

e) 12 and 30

$$12 = 2 \times 2 \times 3$$

$$30 = 2 \times 3 \times 5$$

H.C.F

$$2 \times 3 = 6$$

f) 16 and 48

$$16 = 2 \times 2 \times 2 \times 2$$

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

H.C.F

$$2 \times 2 \times 2 \times 2 = 16$$

B: Find the Highest common factor of the following by complete factorization.

a) 48, 56 and 72

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

$$56 = 2 \times 2 \times 2 \times 7$$

$$72 = 2 \times 2 \times 2 \times 3 \times 3$$

H.C.F

$$2 \times 2 \times 2 = 8$$

b) 198 and 360

$$198 = 2 \times 3 \times 3 \times 11$$

$$360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$$

H.C.F

$$2 \times 3 \times 3 = 18$$

c) 102, 68 and 136

$$68 = 2 \times 2 \times 17$$

$$102 = 2 \times 3 \times 17$$

$$136 = 2 \times 2 \times 2 \times 17$$

H.C.F

$$2 \times 17 = 34$$

d) 1024 and 576

$$576 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$$

$$1024 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

H.C.F

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 = 64$$

e) 405, 783 and 513

$$405 = 3 \times 3 \times 3 \times 3 \times 5$$

$$783 = 3 \times 3 \times 3 \times 29$$

$$513 = 3 \times 3 \times 3 \times 19$$

H.C.F

$$3 \times 3 \times 3 = 27$$

C: Find the H.C.F by using long division method

2 84,144	2 120,168	43 430,516,817	79 632,790,869	97 291,582,776
2 42, 72	2 60,84	10, 12, 19	8, 10, 11	3, 6, 8
3 21, 36	2 30, 42			
7, 12	3 15, 21			
	5, 7			

1 219, 1321, 2320, 8526
219, 1321, 2320, 8526

- a) $2 \times 2 \times 3 = 12$
- b) $2 \times 2 \times 2 \times 3 = 24$
- c) 43
- d) 79
- e) 97
- f) 1

D: Find the H.C.F by using prime factorization method

2 56	2 72
2 28	2 36
2 14	2 18
7 7	3 9
1	3 3
	1

H.C.F

$2 \times 2 \times 2 = 8$

3 21	5 35
7 7	7 7
1	1

H.C.F

$7 = 7$

2 56	2 70
2 28	5 35
2 14	7 7
7 7	1

H.C.F

$2 \times 7 = 14$



3	45
3	15
5	5
	1

3	81
3	27
3	9
3	3
	1

H.C.F

$3 \times 3 = 9$

2	42
3	21
7	7
	1

7	49
7	7
	1

H.C.F

$7 = 7$

2	44
2	22
11	11
	1

2	66
3	33
11	11
	1

2	110
5	55
11	11
	1

H.C.F

$2 \times 11 = 22$

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E: Find the Highest common factor of the following by factorization method.

a) 16 and 24

$$16 = 2 \times 2 \times 2 \times 2$$

$$24 = 2 \times 2 \times 2 \times 3$$

H.C.F

$$2 \times 2 \times 2 = 8$$

b) 28 and 35

$$28 = 2 \times 2 \times 7$$

$$35 = 5 \times 7$$

H.C.F

$$7 = 7$$

c) 56 and 70

$$56 = 2 \times 2 \times 2 \times 7$$

$$70 = 2 \times 5 \times 7$$

H.C.F

$$2 \times 7 = 14$$

d) 15, 52 and 65

$$15 = 3 \times 5$$

$$52 = 2 \times 2 \times 13$$

$$65 = 5 \times 13$$

H.C.F

$$1 = 1$$

e) 15, 18 and 30

$$15 = 3 \times 5$$

$$18 = 2 \times 3 \times 3$$

$$30 = 2 \times 3 \times 5$$

H.C.F

$$3 = 3$$

f) 42, 54 and 64

$$42 = 2 \times 3 \times 7$$

$$54 = 2 \times 3 \times 3 \times 3$$

$$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

H.C.F

$$2 = 2$$



F: Find the HCF of the following by division method

2	8
2	4
2	2
	1

2	16
2	8
2	4
2	2
	1

2	36
2	18
3	9
3	3
	1

H.C.F
 $2 \times 2 = 4$

3	9
3	3
	1

2	18
3	9
3	3
	1

3	27
3	9
3	3
	1

H.C.F
 $3 \times 3 = 9$

2	20
2	10
5	5
	1

2	80
2	40
2	20
2	10
5	5
	1

2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

H.C.F
 $2 \times 2 = 4$

2	60
2	30
3	15
5	5
	1

2	80
2	40
2	20
2	10
5	5
	1

2	90
3	45
3	15
5	5
	1

H.C.F
 $2 \times 5 = 10$

5	25
5	5
	1

3	75
5	25
5	5
	1

5	95
19	19
	1

H.C.F
 $5 = 5$



2	12	2	24	2	88
2	6	2	12	2	44
3	3	2	6	2	22
	1	3	3	11	11
		1			1

H.C.F

$2 \times 2 = 4$

End of Chapter Exercises:

1. HCF of 77 and 121

$77 = 7 \times 11$

$121 = 11 \times 11$

H.C.F

$11 = 11$

2. HCF of 48 and 12

$48 = 2 \times 2 \times 2 \times 2 \times 3$

$12 = 2 \times 2 \times 3$

HCF

$2 \times 2 \times 3 = 12$

3. HCF of 9 and 15

$9 = 3 \times 3$

$15 = 3 \times 5$

HCF

$3 = 3$

4. HCF of 60 and 72

$60 = 2 \times 2 \times 3 \times 5$

$72 = 2 \times 2 \times 2 \times 3 \times 3$

HCF

$2 \times 2 \times 3 = 12$

5. HCF of 16 and 8

$8 = 2 \times 2 \times 2$

$16 = 2 \times 2 \times 2 \times 2$

HCF

$2 \times 2 \times 2 = 8$



Chapter 5 Geometry**Exercise 5.1:**

- a) Acute angle b. Acute angle c. Acute angle d. Acute angle
e. Obtuse angle f. Obtuse angle g. Right angle h. Obtuse angle
i. Reflex angle

Exercise 5.2:**a) Look at the following figures and write the angles they are showing:**

1. $156 - 45 = 111^\circ$
2. $146 - 139 = 7^\circ$
3. $135 - 50 = 85^\circ$
4. $156 - 66 = 90^\circ$
5. $176 - 15 = 161^\circ$
6. $35 - 29 = 6^\circ$
7. $126 - 56 = 70^\circ$
8. $101 - 35 = 66^\circ$
9. $85 - 35 = 50^\circ$
10. $175 - 80 = 95^\circ$

b) Draw the following angles:

Do as directed

c) Solve the question by drawing angles and naming them:

Note : students draw angles by themselves.

1. The captain should move the 180 degree altogether.
2. Pizza is 360 degrees cutting it into
 - a. 3 Pieces = $360 / 3 = 120$
 - b. 4 Pieces = $360 / 4 = 90$
 - c. 5 Pieces = $360 / 5 = 72$
 - d. 6 Pieces = $360 / 6 = 60$
3. obtuse angle
4. 10° (make an acute angle of 10°)



5. Write the angles in their columns:

Acute angle	Obtuse angle
19°	117°
89°	165°
79°	177°
55°	
95°	
88°	
33°	

Exercise 5.3:

A: What is the area and perimeter of the following square, rectangle and quadrilaterals.

- a) Area= $L \times B = 2 \times 2 = 4 \text{ cm}^2$ Perimeter= $2(L+B) = 2(2+2) = 8$
- b) Area= $S \times S = 6 \times 6 = 36 \text{ cm}^2$ Perimeter= $4S = 4(6) = 24$
- c) Area= $L \times B = 3 \times 3 = 9 \text{ cm}^2$ Perimeter= $2(L+B) = 2(3+3) = 12$
- d) Area= $S \times S = 7 \times 7 = 49 \text{ cm}^2$ Perimeter= $4S = 4(7) = 28$
- e) Area = $L \times H = 4.5 \times 5 = 22.5 \text{ cm}^2$ Perimeter= $(L1 + H + L2 + H) = 3+5+6+5 = 19$
- f) Area= $S \times S = 4 \times 4 = 16 \text{ cm}^2$ Perimeter= $4S = 4(4) = 16$

B: What is the area, perimeter of the following quadrilaterals, each square is of 1cm inside each quadrilateral.

- a) Area= 15
Perimeter= 16
- b) Area= 15
Perimeter = 16
- c) Area = 16
Perimeter = 16

C: Calculate the area and perimeter of the following problems.

- 1. A: 20 m^2
P: 18 m
- 2. A: 49 cm^2
P: 28 cm



3. A: 27 cm^2
P: 24 cm

4. A: 16 mm^2
P: 20 mm

5. A: 25 m^2
P: 20m

6. A: 44 m^2
P: 30 m

7. A: 64 mm^2
P: 32mm

8. A: 21 cm^2
P: 20cm

9. A: 225 m^2
P: 60 m

10. A: 80 m^2
P: 36 m

D: Measure and calculate the perimeters of the following figures.

P: 12 sq P: 12 sq

E: Solve the following word problems

1. Area = $L \times B$
 $= 2 \times 1$
 $= 2 \text{ m}^2$

Perimeter = $2(L+B)$
 $= 2(2 + 1)$
 $= 6 \text{ m}$

2. Area = $L \times W$
 $= 4 \times 3$
 $= 12 \text{ m}^2$



$$\begin{aligned} 3. \text{ Area} &= L \times W \\ &= 12 \times 6 \\ &= 72 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} 4. \text{ Area} &= L \times B \\ &= 66 \frac{1}{2} \times 42 \\ &= 2793 \text{ cm}^2 \\ \text{Perimeter} &= 2(L+B) \\ &= 2(66 \frac{1}{2} + 42) \\ &= 217 \text{ cm} \end{aligned}$$

$$\begin{aligned} 5. \text{ Area} &= S \times S \\ &= 275 \times 275 \\ &= 76625 \text{ m}^2 \\ \text{Cost} &= 76625 \times 12 \\ &= 907500 \text{ Rs.} \end{aligned}$$

$$6. \text{ Area of Quadrilateral} = L \times W$$

$$\text{Length} = \frac{6+3}{2}$$

$$\text{Length} = 4.5$$

$$\text{Width} = 4$$

$$\begin{aligned} \text{Area} &= 4 \times 4.5 \\ &= 18 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= 6+4+3+4 \\ &= 17 \text{ cm} \end{aligned}$$

$$7. \text{ Perimeter} = 2(L + W)$$

Now,

$$W = \frac{P}{2} - L$$

$$W = \frac{20}{2} - 5$$

$$W = 5 \text{ m}$$

8. Area of right angled triangle = $\frac{1}{2} (b \times h)$

$$32 = \frac{1}{2} (8 \times h)$$

$$\frac{32 \times 2}{8} = h$$

$$h = 8 \text{ cm}$$

9. Area of Parallelogram = $b \times h$

$$132 = 11 \times h$$

$$\frac{132}{11} = h$$

$$h = 12 \text{ cm}$$

(please reconsider the question)

10. Perimeter = $2(L + D)$

$$= 2(800 + 500)$$

$$= 2(1300)$$

$$= 2600 \text{ m}$$

$$\text{No. of Guards} = \frac{2600}{100}$$
$$= 26$$

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Exercise 5.4

A: Find the perimeter of the given composite figures.

A. Perimeter = $1+4+1+1+2+5$
= 14 cm

B. Perimeter = $3+1+2+4+1+5$
= 16 cm

C. Perimeter = $1+1+6+1+7+2$
= 18 cm

D. Perimeter = $1+4+1+1+2+5$
= 14 cm

E. Perimeter = $4+4+4+9+8+5$
= 34 cm

B: Find the area of the given composite figures

A. Here the figure has a rectangle and two right angle triangles

Area of right angle triangle = $\frac{1}{2}$ (Base \times height)

Base = 1 cm ,

For Height we use Pythagoras theorem

$$h^2 = 3^2 + 1^2$$

$$h^2 = 9 + 1$$

$$h^2 = 10$$

C. Area of right angle triangle = $\frac{1}{2}$ (Base \times height)

Base = 4 cm , Height = 5 cm

Area = $\frac{1}{2}$ (4 \times 5)

$$= 10 \text{ cm}^2$$



D. Here the figure has two rectangles

Area of Rectangles= Length × Width

$$R_1 = 2 \times 1$$

$$= 2 \text{ cm}^2$$

$$R_2 = 5 \times 1$$

$$= 5 \text{ cm}^2$$

$$\text{Total Area} = 5 + 2$$

$$= 7 \text{ cm}^2$$

E. Here the figure has one square, one rectangle and two right angled triangles

Area of Rectangle= Length × Width

Area of square = side × side

Area of Right angled triangles = $\frac{1}{2}$ (Base × Height)

$$R = 3 \times 1$$

$$= 3 \text{ cm}^2$$

$$S = 1 \times 1$$

$$= 1 \text{ cm}^2$$

$$T = \frac{1}{2} (1 \times 1)$$

$$T = \frac{1}{2}$$

$$\text{Total Area} = 3 + 1 + \frac{1}{2}$$

$$= 5 \frac{1}{2} \text{ cm}^2$$

F. Here the figure has one rectangle and one right angled triangles

Area of Rectangle= Length × Width

Area of Right angled triangles = $\frac{1}{2}$ (Base × Height)

$$R = 4 \times 1$$

$$= 4 \text{ cm}^2$$

$$T = \frac{1}{2} (1 \times 1)$$

$$T = \frac{1}{2}$$

$$\text{Total Area} = 4 + \frac{1}{2}$$

$$= 4 \frac{1}{2} \text{ cm}^2$$



C: Make composite figures by using the given measurements of the perimeters

Student performed by themselves.

D: Solve the following word problems.

1. D
2. A
3. B

End of Chapter Exercises**A: Answer the following questions.**

1. A
2. A
3. B
4. C
5. C
6. Fill in the blanks with these terms
 - a. right angle
 - b. vertex
 - c. obtuse angle
 - d. straight angle
 - e. acute angle
 - f. A
 - g. AC and AB
 - h. Acute

B: Solve the following problems

1. Find the area and perimeter of the following rectangles
 - a. A: 221 m^2
P: 60 m
 - b. A: 35.19 c m^2
P: 24 cm
 - c. $32 \text{ dm} = 3.2 \text{ m}$
A: 16 m^2
P: 16.4 m
 - d. Area = 63000000
Perimeter = 141800
2. Find the perimeter of the composite figure
B. 70 mm



3. What is the perimeter of the parallelogram
D. 240 Feet
4. What is the perimeter of an equilateral triangle of side 20 cm
B. 60 cm
5. A plain figure has 5 congruent sides (same size). The perimeter is equal to 600 meters.
What is the length of each side
A. 120 cm

C: Ascertain the angles

1. A. Obtuse
2. B. Obtuse and D. Straight
3. A. Straight
4. C. Right
5. C. Acute
6. C. Reflex
7. A. true
8. B. Acute
9. A. true
10. B. 30
11. B. Angle ABC is obtuse & C. Angle ABC is less than 180
12. A. 83
13. B. Obtuse
14. D. Obtuse

D: Do practically;

1. Draw these angles
2. construct the angles
3. Find the area of the following
 - a. 640cm
 - b. 60 m
 - c. 18.8m
 - d. 27.2 m
 - e. 490 m
 - f. 28 cm
4. Measure the angles with the help of protector



Chapter 6: Decimals**Exercise 6.1****A: Write the decimal fractions of the following figures.**

1. 0.3
2. 0.5
3. 0.75
4. 0.41
5. 0.66
6. 0.25

B: Mark each of the following measurements on scale.**C: Convert the fractions into decimal numbers,**

1. 2.2
2. 4.5
3. 5.1
4. 3.8
5. 2.7
6. 7.6
7. 4.8
8. 6.4
9. 8.3
10. 1.9

Exercise 6.2**A: Convert the following fractions into the decimal numbers.**

- a) 0.06
- b) 0.12
- c) 0.32
- d) 0.45
- e) 0.56
- f) 0.32
- g) 0.93
- h) 0.76
- i) 0.6
- j) 0.03
- k) 0.19
- l) 0.05
- m) 0.44
- n) 0.01
- o) 0.82
- p) 0.99



B: Convert the following fractions into decimal numbers

- a) 4.22
- b) 6.45
- c) 2.72
- d) 9.24
- e) 4.8
- f) 7.2
- g) 5.05
- h) 8.17
- i) 8.1
- j) 3.65
- k) 4.33
- l) 2.22
- m) 4.9
- n) 3.73
- o) 7.77
- p) 5.57

Exercise 6.3**A: Convert the fractions into decimals.**

- a) 4.023
- b) 16.045
- c) 45.072
- d) 18.024
- e) 33.7
- f) 55.402
- g) 22.321
- h) 17.897

B: Solve the following :

- a) 10.005
- b) 32.225
- c) 26.3
- d) 19. 62
- e) 20.199

C: Convert the decimals into fractions.

- 1. $\frac{3}{5}$
- 2. $\frac{4}{5}$
- 3. $\frac{2}{5}$
- 4. $\frac{1}{2}$ 5.
- 5. $2 \frac{1}{5}$
- 6. $\frac{3}{10}$
- 7. $\frac{1}{10}$



8. $\frac{1}{10}$
9. $1\frac{3}{5}$
10. $3\frac{2}{5}$

D: Convert the decimals into fractions.

1. $2\frac{18}{25}$
2. $4\frac{23}{25}$
3. $7\frac{29}{50}$
4. $3\frac{11}{50}$
5. $6\frac{31}{100}$
6. $2\frac{69}{100}$
7. $5\frac{6}{25}$
8. $8\frac{12}{25}$
9. $7\frac{9}{100}$
10. $5\frac{7}{100}$

Exercise 6.4**A: Compare the following decimal fractions.**

1. \geq
2. \leq
3. \geq
4. \leq
5. \geq
6. \geq
7. \leq
8. \geq
9. \geq

B: Arrange the following in descending order

- a. 9.99, 9.72, 9.45, 9.4, 9.22, 9.14, 9.01
- b. 6.88, 6.79, 6.55, 6.5, 6.36, 6.29, 6.10
- c. 4.89, 4.8, 4.66, 4.53, 4.39, 4.12, 4.05

C: Arrange the following in Ascending order

- a. 8.01, 8.14, 8.22, 8.4, 8.45, 8.72, 8.99
- b. 5.01, 5.14, 5.22, 5.4, 5.45, 5.72, 5.99
- c. 7.01, 7.14, 7.22, 7.4, 7.45, 7.72, 7.99



D: Answer the questions below by comparing the two numbers

1. $1.29 \leq 1.92$
2. $7.05 \leq 7.50$
3. $87.76 \geq 87.67$
4. $1.56 \leq 1.65$
5. $164.340 \geq 164.304$

E: Compare below the numbers with $<$, $>$, or $=$

1. \geq
2. \leq
3. \leq
4. \leq
5. \geq
6. \geq
7. $=$
8. \geq
9. \leq

Exercise 6.5

A. Solve the following one digit decimals.

0.7	0.4	1.4	2.3	4.4
$+ 0.5$	$+ 0.6$	$+ 1.8$	$+ 2.7$	$+ 3.9$
1.2	1.0	3.2	5.0	8.3
1.2	1.0	3.2	5.0	8.3
4.8	0.9	2.6	5.5	$7.$
$+ 5.1$	$+ 7.9$	$+ 9.0$	$+ 5.8$	$+ 8.0$
9.9	8.8	11.6	11.3	15.5
9.9	8.8	11.6	11.3	15.5



B. Solve the following two-digit decimals

$\begin{array}{r} 2.45 \\ + 1.72 \\ \hline 4.17 \end{array}$	$\begin{array}{r} 3.26 \\ + 1.02 \\ \hline 4.28 \end{array}$	$\begin{array}{r} 4.13 \\ + 2.70 \\ \hline 6.83 \end{array}$	$\begin{array}{r} 4.78 \\ + 3.16 \\ \hline 7.94 \end{array}$	$\begin{array}{r} 5.32 \\ + 2.70 \\ \hline 8.02 \end{array}$
$\begin{array}{r} 6.27 \\ + 5.61 \\ \hline 11.88 \end{array}$	$\begin{array}{r} 7.88 \\ + 4.08 \\ \hline 11.96 \end{array}$	$\begin{array}{r} 8.33 \\ + 5.55 \\ \hline 13.88 \end{array}$	$\begin{array}{r} 9.20 \\ + 6.45 \\ \hline 15.65 \end{array}$	$\begin{array}{r} 16.03 \\ + 8.01 \\ \hline 24.04 \end{array}$

C. Find the sum

$\begin{array}{r} 1.9 \\ + 1.4 \\ \hline 3.3 \end{array}$	$\begin{array}{r} 0.16 \\ + 0.04 \\ \hline 0.20 \end{array}$	$\begin{array}{r} 1.70 \\ + 0.19 \\ \hline 1.89 \end{array}$	$\begin{array}{r} 0.14 \\ + 0.02 \\ \hline 0.16 \end{array}$	$\begin{array}{r} 0.14 \\ + 0.09 \\ \hline 0.23 \end{array}$
$\begin{array}{r} 0.15 \\ + 0.00 \\ \hline 0.15 \end{array}$	$\begin{array}{r} 0.12 \\ + 0.12 \\ \hline 0.24 \end{array}$	$\begin{array}{r} 1.9 \\ + 1.9 \\ \hline 3.8 \end{array}$	$\begin{array}{r} 1.20 \\ + 0.15 \\ \hline 1.35 \end{array}$	$\begin{array}{r} 0.10 \\ + 0.30 \\ \hline 0.40 \end{array}$
$\begin{array}{r} 0.13 \\ + 0.12 \\ \hline 0.25 \end{array}$	$\begin{array}{r} 1.3 \\ + 0.5 \\ \hline 1.8 \end{array}$	$\begin{array}{r} 0.16 \\ + 0.12 \\ \hline 0.28 \end{array}$	$\begin{array}{r} 0.16 \\ + 1.10 \\ \hline 1.26 \end{array}$	$\begin{array}{r} 1.20 \\ + 0.06 \\ \hline 1.26 \end{array}$
$\begin{array}{r} 0.14 \\ + 0.40 \\ \hline 0.54 \end{array}$	$\begin{array}{r} 0.12 \\ + 0.08 \\ \hline 0.20 \end{array}$	$\begin{array}{r} 0.20 \\ + 0.70 \\ \hline 0.90 \end{array}$	$\begin{array}{r} 0.17 \\ + 1.80 \\ \hline 1.97 \end{array}$	$\begin{array}{r} 1.50 \\ + 0.13 \\ \hline 1.63 \end{array}$



Exercise 6.6

A. Subtract the following one digit decimals.

$$\begin{array}{r} 2.1 \\ - 1.0 \\ \hline 1.1 \end{array} \quad \begin{array}{r} 2.6 \\ - 2.0 \\ \hline 0.6 \end{array} \quad \begin{array}{r} 3.5 \\ - 2.8 \\ \hline 0.7 \end{array} \quad \begin{array}{r} 3.9 \\ - 3.2 \\ \hline 0.7 \end{array} \quad \begin{array}{r} 4.4 \\ - 2.7 \\ \hline 1.7 \end{array}$$

$$\begin{array}{r} 4.9 \\ - 3.7 \\ \hline 1.2 \end{array} \quad \begin{array}{r} 5.1 \\ - 4.7 \\ \hline 0.4 \end{array} \quad \begin{array}{r} 5.9 \\ - 4.3 \\ \hline 1.6 \end{array} \quad \begin{array}{r} 6.6 \\ - 3.2 \\ \hline 3.4 \end{array} \quad \begin{array}{r} 6.9 \\ - 5.6 \\ \hline 1.3 \end{array}$$

B. Subtract the following two-digit decimals

$$\begin{array}{r} 4.57 \\ - 3.87 \\ \hline 0.70 \end{array} \quad \begin{array}{r} 5.67 \\ - 2.45 \\ \hline 3.22 \end{array} \quad \begin{array}{r} 6.29 \\ - 3.76 \\ \hline 2.53 \end{array} \quad \begin{array}{r} 7.82 \\ - 5.12 \\ \hline 2.70 \end{array} \quad \begin{array}{r} 6.90 \\ - 1.89 \\ \hline 5.01 \end{array}$$

$$\begin{array}{r} 8.03 \\ - 2.79 \\ \hline 5.24 \end{array} \quad \begin{array}{r} 9.55 \\ - 6.35 \\ \hline 3.20 \end{array} \quad \begin{array}{r} 11.07 \\ - 3.44 \\ \hline 7.63 \end{array} \quad \begin{array}{r} 14.85 \\ - 9.20 \\ \hline 5.65 \end{array} \quad \begin{array}{r} 16.80 \\ - 12.50 \\ \hline 4.30 \end{array}$$

C. Find the difference

$$\begin{array}{r} 857.00 \\ - 7.51 \\ \hline 849.49 \end{array} \quad \begin{array}{r} 30.50 \\ - 0.54 \\ \hline 29.96 \end{array} \quad \begin{array}{r} 16.3 \\ - 14.0 \\ \hline 2.3 \end{array} \quad \begin{array}{r} 74.40 \\ - 5.96 \\ \hline 68.44 \end{array} \quad \begin{array}{r} 4.87 \\ - 3.69 \\ \hline 1.18 \end{array}$$

$$\begin{array}{r} 47.90 \\ - 0.64 \\ \hline 47.26 \end{array} \quad \begin{array}{r} 31.6 \\ - 15.6 \\ \hline 16.0 \end{array} \quad \begin{array}{r} 236.00 \\ - 1.52 \\ \hline 234.48 \end{array} \quad \begin{array}{r} 148.0 \\ - 4.1 \\ \hline 143.9 \end{array} \quad \begin{array}{r} 35.4 \\ - 25.4 \\ \hline 10.0 \end{array}$$



D. Find the difference

0.980	56.60	0.803	92.80	7.330
0.413	-0.83	-2.82	72.10	0.496
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
0.567	55.77	0.521	20.70	6.834
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
8.080	9.65	0.433	99.4	0.373
0.050	-3.80	0.111	-11.7	0.327
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
8.030	5.85	0.322	87.7	0.046
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

E. Solve these

71.60	67.96	80.00	91.00
17.00	46.71	33.55	-2.25
<hr/>	<hr/>	<hr/>	<hr/>
54.60	21.25	46.45	88.75
23.90	-4.60	27.47	50.26
<hr/>	<hr/>	<hr/>	<hr/>
30.70	16.65	18.98	38.49
<hr/>	<hr/>	<hr/>	<hr/>

Exercise 6.7

A: Multiply the following.

0.21	0.17	7.1	3.22
$\times 3.9$	$\times 3.95$	$\times 2.9$	$\times 8.71$
<hr/>	<hr/>	<hr/>	<hr/>
189	0085	639	322
$063 \times$	$153 \times$	$142 \times$	$2254 \times$
<hr/>	<hr/>	<hr/>	<hr/>
0.819	$051 \times \times$	20.59	$2576 \times \times$
<hr/>	<hr/>	<hr/>	<hr/>
	0.6717		28.0463
	<hr/>		<hr/>



$$\begin{array}{r}
 1.12 \\
 \times 88.0 \\
 \hline
 000 \\
 896 \times \\
 896 \times \times \\
 \hline
 98.560
 \end{array}$$

$$\begin{array}{r}
 4.4 \\
 \times 4.4 \\
 \hline
 176 \\
 176 \times \\
 \hline
 19.36
 \end{array}$$

$$\begin{array}{r}
 8.12 \\
 \times 2.7 \\
 \hline
 5684 \\
 1624 \times \\
 \hline
 21.924
 \end{array}$$

$$\begin{array}{r}
 6.46 \\
 \times 4.0 \\
 \hline
 000 \\
 2584 \times \\
 \hline
 25.840
 \end{array}$$

$$\begin{array}{r}
 5.16 \\
 \times 3.9 \\
 \hline
 4644 \\
 1548 \times \\
 \hline
 20.124
 \end{array}$$

$$\begin{array}{r}
 7.98 \\
 \times 4.0 \\
 \hline
 000 \\
 3192 \times \\
 \hline
 31.920
 \end{array}$$

$$\begin{array}{r}
 0.07 \\
 \times 5.3 \\
 \hline
 021 \\
 035 \times \\
 \hline
 0.371
 \end{array}$$

$$\begin{array}{r}
 15.0 \\
 5.8 \\
 \hline
 1200 \\
 750 \times \\
 \hline
 87.00
 \end{array}$$

$$\begin{array}{r}
 7.07 \\
 \times 3.5 \\
 \hline
 3535 \\
 2121 \times \\
 \hline
 24.745
 \end{array}$$

$$\begin{array}{r}
 7.62 \\
 \times 0.41 \\
 \hline
 762 \\
 3048 \times \\
 000 \times \times \\
 \hline
 3.1242
 \end{array}$$

$$\begin{array}{r}
 34.4 \\
 \times 0.02 \\
 \hline
 688 \\
 000 \times \\
 000 \times \times \\
 \hline
 0.688
 \end{array}$$

$$\begin{array}{r}
 56 \\
 \times 0.56 \\
 \hline
 336 \\
 280 \times \\
 00 \times \times \\
 \hline
 31.36
 \end{array}$$

$$\begin{array}{r}
 6.86 \\
 \times 6.9 \\
 \hline
 6174 \\
 4116 \times \\
 \hline
 47.334
 \end{array}$$

$$\begin{array}{r}
 9.42 \\
 \times 5.3 \\
 \hline
 2826 \\
 4710 \times \\
 \hline
 49.926
 \end{array}$$

$$\begin{array}{r}
 99.1 \\
 \times 0.16 \\
 \hline
 5946 \\
 991 \times \\
 000 \times \times \\
 \hline
 15.856
 \end{array}$$

$$\begin{array}{r}
 7.62 \\
 \times 3.6 \\
 \hline
 4572 \\
 2286 \times \\
 \hline
 27.432
 \end{array}$$



$$\begin{array}{r}
 8.41 \\
 \times 4.3 \\
 \hline
 2523 \\
 3364 \times \\
 \hline
 36.163
 \end{array}$$

$$\begin{array}{r}
 2.03 \\
 \times 0.12 \\
 \hline
 406 \\
 203 \times \\
 \hline
 000 \times \times \\
 \hline
 0.2436
 \end{array}$$

$$\begin{array}{r}
 56.3 \\
 \times 2.9 \\
 \hline
 5067 \\
 1126 \times \\
 \hline
 163.27
 \end{array}$$

$$\begin{array}{r}
 76.2 \\
 \times 5.7 \\
 \hline
 5334 \\
 3610 \times \\
 \hline
 414.34
 \end{array}$$

$$\begin{array}{r}
 80.36 \\
 \times 4.7 \\
 \hline
 56252 \\
 32144 \times \\
 \hline
 377.692
 \end{array}$$

$$\begin{array}{r}
 6.5 \\
 \times 8.2 \\
 \hline
 130 \\
 520 \times \\
 \hline
 53.30
 \end{array}$$

$$\begin{array}{r}
 4.59 \\
 \times 5.3 \\
 \hline
 1377 \\
 2295 \times \\
 \hline
 24.327
 \end{array}$$

$$\begin{array}{r}
 430 \\
 \times 2.8 \\
 \hline
 3440 \\
 860 \times \\
 \hline
 1204.0
 \end{array}$$

$$\begin{array}{r}
 91.7 \\
 \times 3.8 \\
 \hline
 7336 \\
 2751 \times \\
 \hline
 348.46
 \end{array}$$

$$\begin{array}{r}
 3.65 \\
 \times 6.5 \\
 \hline
 1825 \\
 2190 \times \\
 \hline
 23.725
 \end{array}$$

Exercise 6.8

$$\begin{array}{r}
 7.3 \\
 8 \overline{) 58.4} \\
 \underline{56} \\
 24 \\
 \underline{24} \\
 \times \times
 \end{array}$$

$$\begin{array}{r}
 3.6 \\
 6 \overline{) 21.6} \\
 \underline{18} \\
 36 \\
 \underline{36} \\
 \times \times
 \end{array}$$

$$\begin{array}{r}
 5.2 \\
 8 \overline{) 41.6} \\
 \underline{40} \\
 16 \\
 \underline{16} \\
 \times \times
 \end{array}$$

$$\begin{array}{r}
 32.3 \\
 2 \overline{) 64.6} \\
 \underline{6} \\
 4 \\
 \underline{4} \\
 6 \\
 \underline{6} \\
 \times
 \end{array}$$



$$\begin{array}{r}
 16.7 \\
 5 \overline{) 83.5} \\
 \underline{5} \\
 33 \\
 \underline{30} \\
 35 \\
 \underline{35} \\
 \times\! \times
 \end{array}$$

$$\begin{array}{r}
 23.6 \\
 3 \overline{) 70.8} \\
 \underline{6} \\
 10 \\
 \underline{9} \\
 18 \\
 \underline{18} \\
 \times\! \times
 \end{array}$$

$$\begin{array}{r}
 3.2 \\
 7 \overline{) 22.4} \\
 \underline{21} \\
 14 \\
 \underline{14} \\
 \times\! \times
 \end{array}$$

$$\begin{array}{r}
 8.3 \\
 4 \overline{) 33.2} \\
 \underline{32} \\
 12 \\
 \underline{12} \\
 \times\! \times
 \end{array}$$

$$\begin{array}{r}
 53.2 \\
 0.4 \overline{) 21.28} \\
 \underline{20} \\
 12 \\
 \underline{12} \\
 8 \\
 \underline{8}
 \end{array}$$

$$\begin{array}{r}
 14.4 \\
 0.9 \overline{) 12.96} \\
 \underline{9} \\
 39 \\
 \underline{36} \\
 36 \\
 \underline{36}
 \end{array}$$

$$\begin{array}{r}
 63.2 \\
 0.7 \overline{) 44.24} \\
 \underline{42} \\
 22 \\
 \underline{21} \\
 14 \\
 \underline{14}
 \end{array}$$

$$\begin{array}{r}
 2.5 \\
 5.4 \overline{) 13.50} \\
 \underline{108} \\
 270 \\
 \underline{270} \\
 \times\! \times\! \times
 \end{array}$$

$$\begin{array}{r}
 53.85 \\
 1.2 \overline{) 64.62} \\
 \underline{60} \\
 46 \\
 \underline{36} \\
 102 \\
 \underline{96} \\
 60 \\
 \underline{60} \\
 \times\! \times
 \end{array}$$

$$\begin{array}{r}
 55.7 \\
 1.5 \overline{) 83.55} \\
 \underline{75} \\
 85 \\
 \underline{75} \\
 105 \\
 \underline{105} \\
 \times\! \times\! \times
 \end{array}$$

$$\begin{array}{r}
 2.8 \\
 7.4 \overline{) 20.72} \\
 \underline{148} \\
 592 \\
 \underline{592} \\
 \times\! \times\! \times
 \end{array}$$

$$\begin{array}{r}
 6.7 \\
 1.7 \overline{) 11.39} \\
 \underline{102} \\
 119 \\
 \underline{119} \\
 \times\! \times\! \times
 \end{array}$$



$$\begin{array}{r} 1 \\ 12 \overline{) 12} \\ \underline{12} \\ \times \times \end{array}$$

$$\begin{array}{r} 11.0 \\ 2.2 \overline{) 24.20} \\ \underline{22} \\ 220 \\ \underline{220} \\ \times \times \times \end{array}$$

$$\begin{array}{r} 5.2 \\ 8.0 \overline{) 41.60} \\ \underline{40} \\ 160 \\ \underline{160} \\ \times \times \times \end{array}$$

$$\begin{array}{r} 10.2 \\ 2.2 \overline{) 22.44} \\ \underline{22} \\ 44 \\ \underline{44} \\ \times \times \end{array}$$

$$\begin{array}{r} 10.3 \\ 1.1 \overline{) 11.33} \\ \underline{11} \\ 33 \\ \underline{33} \\ 33 \end{array}$$

$$\begin{array}{r} 0.6 \\ 0.2 \overline{) 0.12} \\ \underline{0.12} \\ \times \times \times \end{array}$$

$$\begin{array}{r} 0.8 \\ 1.5 \overline{) 1.2} \\ \underline{1.20} \\ \times \times \times \end{array}$$

$$\begin{array}{r} 0.1 \\ 0.5 \overline{) 0.05} \\ \underline{5} \\ \times \times \times \end{array}$$

$$\begin{array}{r} 4.4 \\ 0.2 \overline{) 0.88} \\ \underline{8} \\ 8 \\ \underline{8} \\ \times \end{array}$$

Exercise 6.9

A: Convert the fractions to decimals

1. 0.75
2. 0.2
3. 0.25
4. 0.4
5. 0.8
6. 0.75



7. 0.25
8. 0.2
9. 0.58
10. 0.25
11. 0.62
12. 0.64
13. 1.25
14. 3.4
15. 0.35
16. 7.8
17. 8
18. 0.25
19. 3.4
20. 2.25
21. 7.5
22. 6.8
23. 4.625
24. 3.81

B: Convert the decimals into fractions

1. $\frac{7}{10}$
2. $\frac{6}{25}$
3. $\frac{13}{20}$
4. $\frac{127}{1000}$
5. $3\frac{4}{5}$
6. $4\frac{9}{10}$
7. $5\frac{3}{4}$
8. $1\frac{49}{50}$
9. $9\frac{27}{100}$
10. 8
11. $\frac{1}{2}$
12. $\frac{667}{1000}$
13. $\frac{3}{4}$
14. $\frac{7}{8}$
15. $\frac{4}{5}$
16. $\frac{1}{5}$
17. $\frac{167}{1000}$
18. $\frac{2}{5}$



19. $\frac{1}{2}$
20. $\frac{667}{1000}$
21. $\frac{333}{1000}$
22. $\frac{3}{5}$
23. $\frac{1}{4}$
24. $\frac{9}{20}$
25. $\frac{833}{1000}$
26. $\frac{1}{4}$
27. $\frac{3}{4}$
28. $\frac{3}{20}$
29. $\frac{1}{8}$
30. $\frac{667}{1000}$
31. $\frac{333}{1000}$
32. $\frac{3}{8}$

End of Chapter Exercises

1. $100 - 40.75 = 59.25$
2. $10.5 \times 9 = 94.5$ g
3. $3.5 \times 4 = 14 + 1.5 = 15.5$ hours
4. $1212.5 - 768.4 = 444.1$ km
5. $149.95 + 219.95 + 119.95 = 488.9$ Total cost
yes she has enough money.
6. $90.99 \times 170.4 = 15,504.696$ rupees
7. $1300 - 1200.46 = 99.54$ rupees
8. $129.5 / 18.5 = 7$
9. $10 - 0.037 = 9.963$
10. $187.5 / 15 = 12.5$ kg

Chapter 7: Measuring length**Exercise 7.1****A: Convert each of the following units:**

1. 42 mm = 4.2 cm
2. 66 cm = 0.66 m
3. 450 m = 0.45 km
4. 15.8 km = 15800 m
5. 8 m = 0.008 km
6. 2.6 cm = 26 mm



B: Solve each of the following equations

1. $2.4 \text{ km} = 2400 \text{ m}$
2. $65 \text{ m} = 0.065 \text{ km}$
3. $9.3 \text{ m} = 930 \text{ cm}$
4. $295 \text{ cm} = 2.95 \text{ m}$
5. $268 \text{ cm} = 2.68 \text{ m}$
6. $321 \text{ km} = 321000 \text{ m}$

C: Which unit would you use to measure the

1. A. Metres
2. B. Kilometres
3. A. Metres
4. A. Metres

D: measure the length of these pencils in centimeters and millimeters :

Students will measure by themselves.

E: Draw lines that measure

Students will draw by themselves.

Exercise 7.2**A: Solve the following**

- a) 40 cm
- b) 35 mm
- c) 29 cm
- d) 45 mm
- e) 93 cm
- f) 350 m
- g) 25 cm
- h) 150 m

B: Solve the following by addition or subtraction

- a) 22.9 m
- b) 334 km
- c) 56 cm
- d) 262 km
- e) 16.41 m
- f) 2.7 mm
- g) 1.32 .
- h) 100.6mm



C: Add the following

- a) 39 m
- b) 57 cm
- c) 9m 55 cm

D: Subtract the following

- a) 22 m
- b) 25 m
- c) 13 cm
- d) 16 m
- e) 5m 14 cm
- f) 12m 07 cm

Exercise 7.3

A: Solve the following

$$\begin{array}{r} 18.62 \\ \times \quad 5 \\ \hline 93.10 \end{array}$$

93.1 m

$$\begin{array}{r} 400 \\ \times \quad 22 \\ \hline 800 \end{array}$$

$$\begin{array}{r} 800 \times \\ \hline 8800 \end{array}$$

8800 cm = 88 m

$$\begin{array}{r} 300 \\ \times \quad 67 \\ \hline 2100 \end{array}$$

$$\begin{array}{r} 1800 \times \\ \hline 20100 \end{array}$$

20100 cm = 201 m

$$\begin{array}{r} 3000 \\ \times \quad 315 \\ \hline 15000 \end{array}$$

$$\begin{array}{r} 3000 \times \\ \hline 9000 \end{array}$$

$$\begin{array}{r} 94500 \end{array}$$

$$\begin{array}{r} 8.5 \\ \times \quad 2.8 \\ \hline 680 \end{array}$$

$$\begin{array}{r} 170 \times \\ \hline 2380 \end{array}$$

23.8 km

$$\begin{array}{r} 56 \\ \times \quad 12 \\ \hline 112 \end{array}$$

$$\begin{array}{r} 56 \times \\ \hline 672 \end{array}$$

672 cm



7

$$\frac{16.4}{4}$$

= 4.1 km

8

$$\frac{67.8}{2}$$

$$3.5$$

= 19.371m

9

$$\frac{205.6}{1.8}$$

= 114.22 cm

10

$$\frac{545}{70}$$

= 7.785mm

11

$$\begin{array}{r} 762 \\ \times 58 \\ \hline 6096 \\ 3810 \times \\ \hline 44196 \\ \hline 44196 \text{ mm} \end{array}$$

12

$$\begin{array}{r} 104.255 \\ \times 23.4 \\ \hline 417020 \\ 312765 \times \\ 208510 \times \times \\ \hline 2439.5670 \\ \hline \end{array}$$

2439.5670 mm



B: Solve the following word problems.

1. $\frac{4200}{30}$
= 140 pieces

2. $\frac{5600}{40}$
= 140 pieces

3. $\frac{5100}{5}$
= 1,020 pieces

4. 10×2
= 20 m
 $20 = 20 \times 100$
= 2000 cm

5. 25×5
= 125
= $1.25 - 0.25$
= 1 m longer

End of Chapter Exercises

A: Answer the following

1. B. 500
2. C. Kilometers
3. B. 70 cm
4. A. 110 cm
5. C. Metre
6. A. Millimetre
7. C. Metres
8. A. Millimetres



B: Solve the following equations:

- a) $11\text{m} \div 6 = 1.83 \text{ m}$
- b) $865000 \times 3 = 2,595 \text{ km}$
- c) $88\text{m}32\text{cm} + 15\text{m}07\text{cm} = 103\text{m} 39 \text{ cm}$
- d) $64\text{m}34\text{cm} - 34\text{m}34\text{cm} = 30 \text{ m}$
- e) $28 \div 4 = 7 \text{ cm}$
- f) $695 \times 12 = 8,340 \text{ mm}$
- g) $57\text{cm}50\text{mm} + 54\text{cm} + 42\text{mm} = 111\text{cm} 92 \text{ mm}$
- h) $67\text{cm}21\text{mm} - 34\text{cm}60\text{mm} = 32 \text{ cm} 61 \text{ mm}$
- i) $75 \div 5 = 15 \text{ m}$
- j) $987 \text{ m} \times 23 \text{ m} = 22,701 \text{ m}$
- k) $2234 \times 6 = 13,404 \text{ mm}$

C: Solve the following word problems

- a) $39 - 12 = 27 \text{ m}$
- b) $7 + 9 = 16 \text{ m}$
- c) $4.5 - 2.5 = 2 \text{ m}$
- d) $2.5 \times 30 = 75 \text{ km}$
- e) $150 - 110 = 40 \text{ cm or } 0.4 \text{ m}$
- f) $200 \div 25 = 8 \text{ gifts}$
- g) $867 - 598 = 269 \text{ km}$
- h) $75 + 87 = 162 \text{ cm}$



Chapter 8 Mass and weight**Exercise 8.1****A: Convert grams to kilograms or kilograms to grams**

1. 2 kg 96 g
2. 6920 g
3. 9540 g
4. 5 kg 290 g
5. 8 kg 540 g
6. 6790 g
7. 9190 g
8. 7 kg 830 g
9. 2kg 230 g
10. 6630 g

B: Convert grams to kilograms:

1. 200 kg
2. 0.8 kg
3. 400 kg
4. 1 kg
5. 40 kg
6. 10 kg
7. 3 kg
8. 0.5 kg
9. 30 kg
10. 20 kg

C: Convert kilograms to grams :

1. 5000 g
2. 7300 g
3. 8900 g
4. 1250 g
5. 67000 g
6. 9750 g
7. 4700 g
8. 11000 g
9. 4416 g
10. 27025 g

D: Solve the following word problems.

1. 20,000 mg
2. 1800 g
3. 1500 g
4. 8 kg



E: Convert tonnes to kilograms and kilograms to tonnes.

1. 48200 kg
2. 23.5 t
3. 20500kg
4. 35.27 t
5. 47.31 t
6. 723000 kg
7. 71.1 t
8. 11200 kg

F: Solve the following word problems:

1. 0.125 t
2. 4320 kg
3. 20
4. 2.5 t
5. 500 bags

G: Convert from tonnes to long tons

1. 8 tons
2. 4 tons
3. 2 tons
4. 7 tons
5. 6 tons
6. 22 tons

H: Convert from short tones to tonnes

1. 13.39 tonnes
2. 5.7 tonnes
3. 8.25 tonnes
4. 71.42 tonnes
5. 15.36 tonnes
6. 0.8107 tonnes

Exercise 8.2**A: Add the following:**

1. $65100 \text{ kg} + 67070 \text{ kg}$
 $= 132,170 \text{ kg}$
2. $55300 \text{ kg} + 45.7 \text{ tonne}$
 $= 55300 + 45700$
 $= 101,000 \text{ kg}$

3. $78220 \text{ kg} + 10.8 \text{ tonne} + 16.6 \text{ ton}$
 $= 78220 + 10800 + 15059$
 $= 104,079 \text{ kg}$
4. $22.6 \text{ long ton} + 18.7 \text{ tonne} + 33.6 \text{ short ton}$
 $= 22963 + 18700 + 30481$
 $= 72,144 \text{ kg}$
5. $34010 \text{ kg} + 21330 \text{ kg} + 4.7 \text{ tonne}$
 $= 34010 + 21330 + 4700$
 $= 60,040 \text{ kg}$
6. $44.7 \text{ tonne} + 35.6 \text{ tonne} + 54.2 \text{ tonne}$
 $= 44.7 + 35.6 + 54.2$
 $= 134.5 \text{ tonne}$

B: Subtract the following

1. $65100 \text{ kg} - 53200 \text{ kg}$
 $= 11,900 \text{ kg}$
2. $55300 \text{ kg} - 24.7 \text{ tonne}$
 $= 55300 - 24700$
 $= 30,600 \text{ kg}$
3. $67220 \text{ kg} + 13.8 \text{ tonne} - 26.6 \text{ tonne}$
 $= 67220 + 13800 - 26600$
 $= 54,420 \text{ kg}$
4. $20.6 \text{ tonne} + 21.7 \text{ tonne} - 42.6 \text{ tonne}$
 $= - 0.3 \text{ tonne}$
5. $4210 \text{ kg} + 11320 \text{ kg} - 3.7 \text{ tonne}$
 $= 4210 + 11320 - 3700$
 $= 11,830 \text{ kg}$
6. $14.7 \text{ tonne} + 34.6 \text{ tonne} - 57.2 \text{ tonne}$
 $= - 7.9 \text{ tonne}$



C: Multiply the following

1. $56.3 \text{ tonne} \times 3.1 \text{ tonne}$
 $= 174.53 \text{ tonne}$
2. 54310×120
 $= 6,517,200 \text{ kg}$
3. 66.10×2.8
 $= 185.08 \text{ tonne}$
4. 27.6×3.2
 $= 88.32 \text{ tonne}$
5. $30540 \text{ kg} \times 180$
 $= 5,497,200 \text{ kg}$
6. 82.5×5.5
 $= 453.75 \text{ tonne}$

D: Divide the following

1. $56.4 \text{ tonne} \div 3.2 \text{ tonne}$
 $= 17.625 \text{ tonne}$
2. $54210 \text{ kg} \div 24 \text{ kg}$
 $= 2,258.75 \text{ kg}$
3. $82602 \text{ kg} \div 48 \text{ kg}$
 $= 1,720.875 \text{ kg}$
4. $27.6 \text{ tonne} \div 3.2 \text{ tonne}$
 $= 8.625 \text{ tonne}$
5. $75.8 \text{ tonne} \div 1.6 \text{ kg}$
 $= 75800 \div 1.6$
 $= 47,375$
6. $64.24 \text{ tonne} \div 4.4 \text{ tonne}$
 $= 14.6 \text{ tonne}$



End of Chapter Exercises

1. $85 \times 6 = 510$ g
2. $45200 \div 1000 = 45.2$ tonne
3. $1.4 \times 7 = 9.8$ kg
4. 5.4 tonne is heavier
5. $72000 - 65200 = 6,700$ kg
6. $2500 \times 50 = 125,000$ kg
7. $70 \times 9 = 630$ kg
8. $35.2 \times 1000 = 35200$ kg & $35.2 \times 1.10 = 38.72$ short ton
9. $86000 - 76630 = 9370$ kg
10. $90 - 35 = 55$ kg
11. 10 kg = 10000 g, $10000 \div 200 = 50$ oranges
12. $6 \div 4 = 1.5$ kg
13. $5 - 1 = 4$ kg
14. $6.500 + 1.250 + 2 = 9$ kg 750g
15. $10.00 - 5.100 = 4$ kg 900 g
16. $48.00 + 42.00 + 43.500 = 133$ kg 500g
17. $495 \times 12 = 5940 \div 1000 = 5.94$ tonnes
18. $1350 + 1670 + 1400 = 4420$ kg
19. $126 \div 6 = 21$ kg
20. $1000 - 485 = 515$ g



Chapter 9: Volume and Capacity

Exercise 9.1

A: Convert the following into millilitres:

- a) $7 \times 1000 = 7000 \text{ ml}$
- b) $33 \times 1000 = 33000 \text{ ml}$
- c) $77 \times 1000 = 77000 \text{ ml}$
- d) $2.57 \times 1000 = 2570 \text{ ml}$
- e) $4.87 \times 1000 = 4870 \text{ ml}$
- f) $7.77 \times 1000 = 7770 \text{ ml}$
- g) $6.78 \times 1000 = 6780 \text{ ml}$
- h) $8.90 \times 1000 = 8900 \text{ ml}$
- i) $9.76 \times 1000 = 9760 \text{ ml}$

B: Convert the following into Litres

- a) $5054 \div 1000 = 3.054 \text{ l}$
- b) $2387 \div 1000 = 2.387 \text{ l}$
- c) $899 \div 1000 = 0.899 \text{ l}$
- d) $6008 \div 1000 = 6.008 \text{ l}$
- e) $8231 \div 1000 = 8.231 \text{ l}$
- f) $9451 \div 1000 = 9.451 \text{ l}$
- g) $9000 \div 1000 = 9 \text{ l}$
- h) $5067 \div 1000 = 5.067 \text{ l}$
- i) $4876 \div 1000 = 4.876 \text{ l}$

C: Answer the following

- 1. 5 l
- 2. 23000 ml
- 3. 11000 l
- 4. 500 ml
- 5. 1500 ml

Exercise 9.2

A: Solve the following addition problems.

L	ml	L	ml	L	ml
2.	9 1 9	3 4.	2 0 7	3 0.	0 0 8
+	0. 2 9 5	+1 0.	3 3 1	+	9 6 7
3.	2 1 4	4 4.	5 3 8	3 0.	9 7 5



$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 1 \ 2. \ 7 \ 0 \ 0 \\
 + \quad . \ 4 \ 2 \ 9 \\
 \hline
 1 \ 3. \ 1 \ 2 \ 9
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 8. \ 6 \ 7 \ 5 \\
 +. \ 4 \ 5 \ 6 \\
 \hline
 9. \ 1 \ 3 \ 1
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 4 \ 5. \ 3 \ 4 \ 5 \\
 + \quad . \ 2 \ 1 \ 8 \\
 \hline
 4 \ 5. \ 5 \ 6 \ 3
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 4 \ 4. \ 2 \ 7 \ 5 \\
 + \quad . \ 8 \ 8 \ 6 \\
 \hline
 4 \ 5. \ 1 \ 6 \ 1
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 9. \ 5 \ 6 \ 9 \\
 + \ 1. \ 0 \ 0 \ 0 \\
 \hline
 1 \ 0. \ 5 \ 6 \ 9
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 5 \ 9. \ 6 \ 7 \ 8 \\
 3 \ 0 \ 9. \ 0 \ 0 \ 0 \\
 \hline
 3 \ 6 \ 8. \ 6 \ 7 \ 8
 \end{array}$$

B: Solve the following subtraction problems.

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 0. \ 7 \ 9 \ 9 \\
 - \ 0. \ 6 \ 7 \ 7 \\
 \hline
 0. \ 1 \ 2 \ 2
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 1. \ 2 \ 4 \ 6 \\
 - \ 0. \ 9 \ 7 \ 8 \\
 \hline
 . \ 2 \ 6 \ 8
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 1 \ 2. \ 8 \ 8 \ 0 \\
 - \ 7. \ 7 \ 6 \ 2 \\
 \hline
 5. \ 1 \ 1 \ 8
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 1 \ 7. \ 3 \ 2 \ 5 \\
 - \ 9. \ 6 \ 3 \ 0 \\
 \hline
 7. \ 6 \ 9 \ 5
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 4 \ 8. \ 7 \ 8 \ 9 \\
 - \ 7. \ 5 \ 6 \ 4 \\
 \hline
 4 \ 1. \ 2 \ 2 \ 5
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 9 \ 0. \ 9 \ 8 \ 7 \\
 - \ 1 \ 2. \ 6 \ 7 \ 4 \\
 \hline
 7 \ 8. \ 3 \ 1 \ 3
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 1 \ 1. \ 8 \ 8 \ 0 \\
 - \ 2. \ 7 \ 6 \ 2 \\
 \hline
 9. \ 1 \ 1 \ 8
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 2 \ 3. \ 4 \ 3 \ 2 \\
 - \ 1 \ 0. \ 8 \ 2 \ 3 \\
 \hline
 1 \ 2. \ 6 \ 0 \ 9
 \end{array}$$

$$\begin{array}{r}
 \text{L} \quad \text{ml} \\
 8 \ 9. \ 0 \ 7 \ 6 \\
 3. \ 7 \ 8 \ 6 \\
 \hline
 8 \ 5. \ 3 \ 1 \ 0
 \end{array}$$



C: Solve the following Multiplication problems.

All the liters of this exercise converted into milliliters by dividing 1000

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 3 \ 4 \ 2 \ 0 \\
 \times \\
 \hline
 1 \ 7 \ 1 \ 0 \ 0 \\
 6 \ 8 \ 4 \ 0 \ x \\
 \hline
 8 \ 5 \ 5 \ 0 \ 0\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 1 \ 2 \ 3 \ 0 \\
 \times \\
 \hline
 0 \ 0 \ 0 \ 0 \\
 2 \ 4 \ 6 \ 0 \ x \\
 \hline
 2 \ 4 \ 6 \ 0 \ 0\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 4 \ 5 \ 4 \ 1 \\
 \times \\
 \hline
 2 \ 2 \ 7 \ 0 \ 5 \\
 2 \ 2 \ 7 \ 0 \ 5 \ x \\
 \hline
 2 \ 4 \ 9 \ 7 \ 5 \ 5\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 2 \ 6 \ 7 \ 5 \\
 \times \\
 \hline
 1 \ 0 \ 7 \ 0 \ 0 \\
 8 \ 0 \ 2 \ 5 \ x \\
 \hline
 9 \ 0 \ 9 \ 5 \ 0\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 3 \ 4 \ 7 \ 8 \ 6 \\
 \times \\
 \hline
 1 \ 7 \ 3 \ 9 \ 3 \ 0 \\
 2 \ 0 \ 8 \ 7 \ 1 \ 6 \ x \\
 \hline
 2 \ 2 \ 6 \ 1 \ 0 \ 9 \ 0\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 6 \ 5 \ 9 \ 0 \ 8 \\
 \times \\
 \hline
 1 \ 3 \ 1 \ 8 \ 1 \ 6 \\
 6 \ 5 \ 9 \ 0 \ 8 \ x \\
 \hline
 7 \ 9 \ 0 \ 8 \ 9 \ 6\text{l}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 2 \ 2 \ 2 \ 0 \\
 \times \\
 \hline
 2 \ 2 \ 2 \ 0 \\
 2 \ 2 \ 2 \ 0 \ x \\
 \hline
 2 \ 4 \ 4 \ 2 \ 0\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 6 \ 2 \ 4 \ 6 \\
 \times \\
 \hline
 1 \ 2 \ 4 \ 9 \ 2 \\
 2 \ 4 \ 9 \ 8 \ 4 \ x \\
 \hline
 2 \ 6 \ 2 \ 3 \ 3 \ 2\text{ml}
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \\
 \hline
 2 \ 3 \ 4 \ 5 \ 3 \\
 \times \\
 \hline
 0 \ 0 \ 0 \ 0 \ 0 \\
 2 \ 1 \ 1 \ 0 \ 7 \ 7 \ x \\
 \hline
 2 \ 1 \ 1 \ 0 \ 7 \ 7 \ 0\text{ml}
 \end{array}$$

D: Solve the following division problems.

- a) 0.1 l
- b) 0.1625 l
- c) 258.09 ml
- d) 0.2968
- e) 83.0526 ml
- f) 4.54485 ml
- g) 125.083 ml
- h) 300 ml
- i) 11.97 L



End of Chapter Exercises

1. 499.28 ml 2. 4,000 ml 3. 9 l 4. 9 ml 5. 5.3 l 6. 48,000 ml 7. 2713 ml
 8. 1 litre 9. 110 ml 10. 1800 ml

Chapter 10 Data Handling

Exercise 10.1

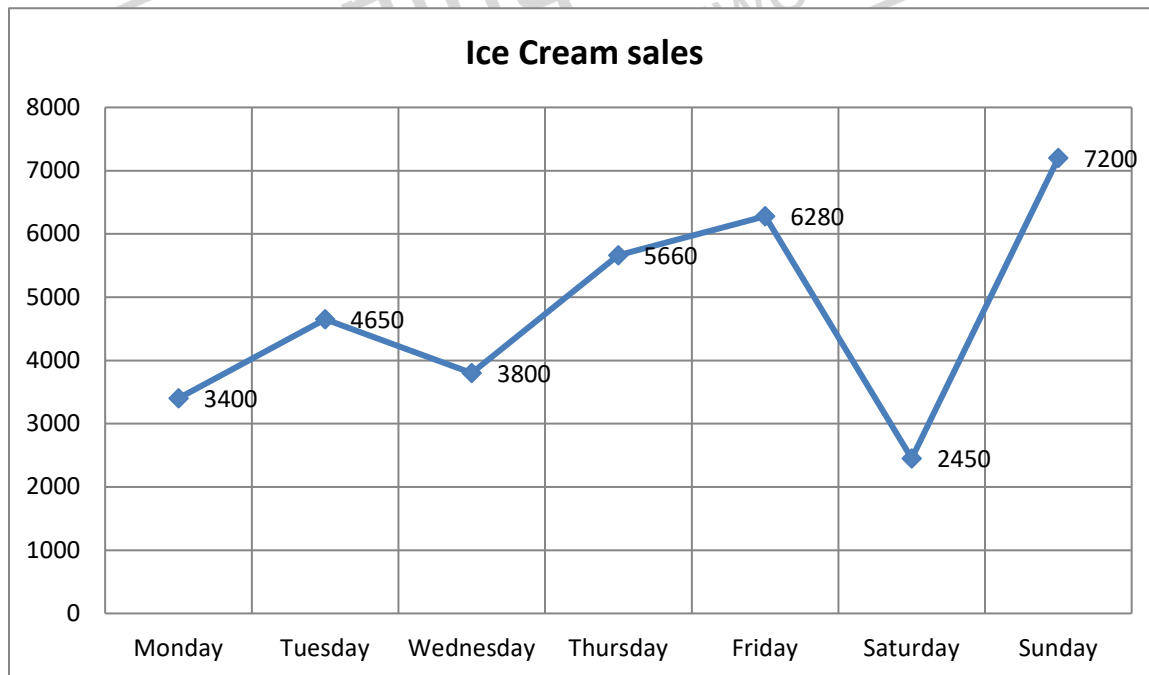
A: 1. May 2. 700 3. 2,980 4. 230 5. Stability

B: 1. 30 km 2. Yes 3. 10 km 4. 4 hours

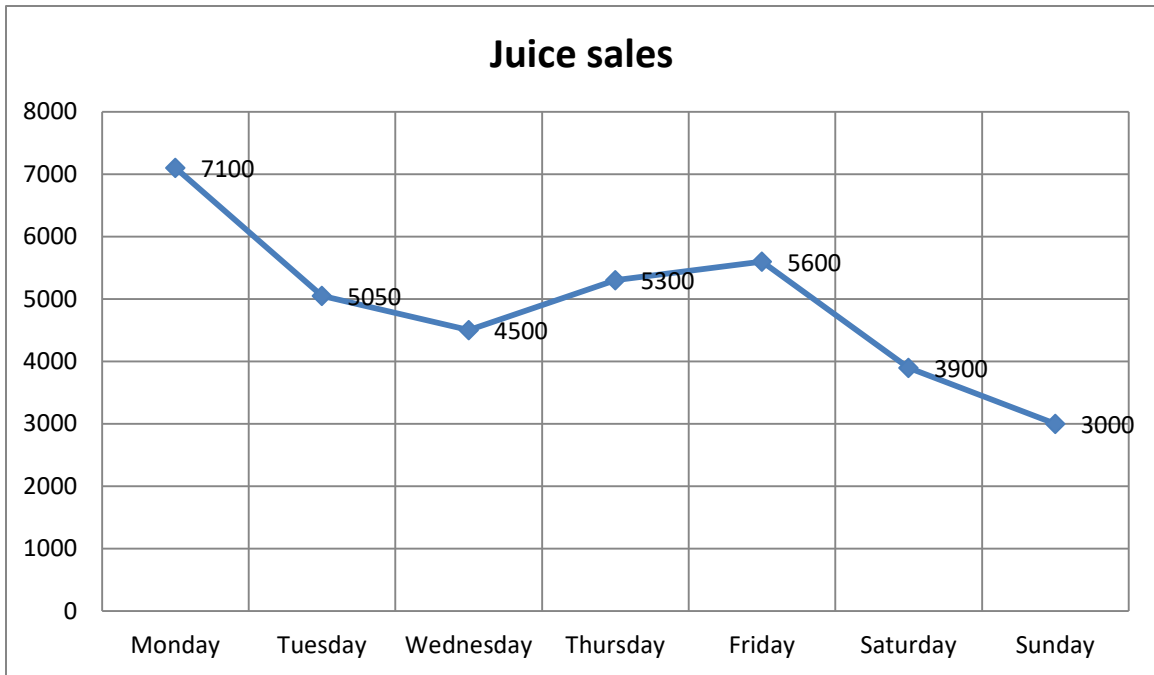
C: 1. 8th 2. 1st test 3. 8 4. Yes 5. 4

Exercise 10.2

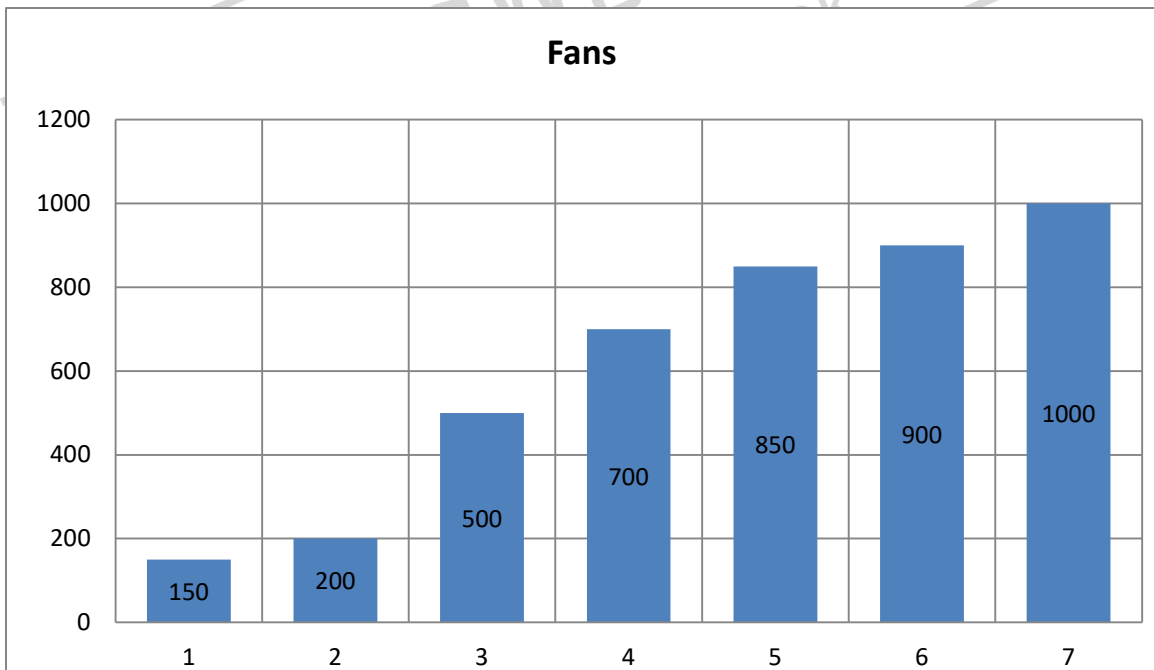
A



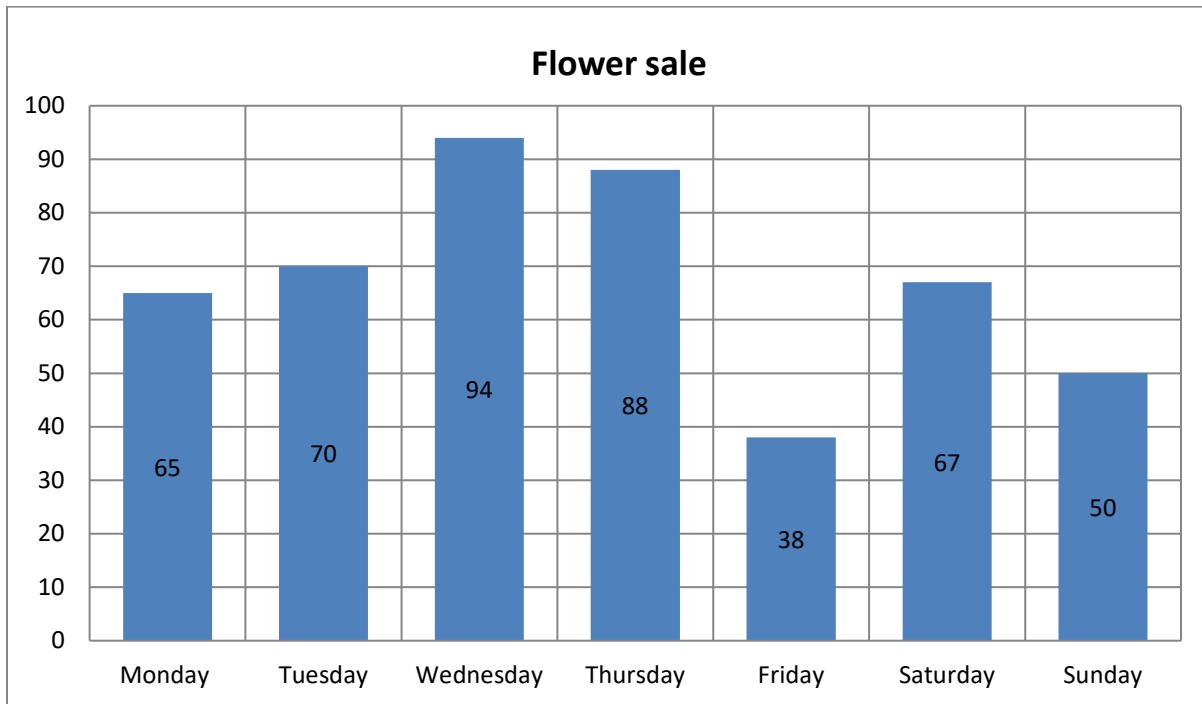
B



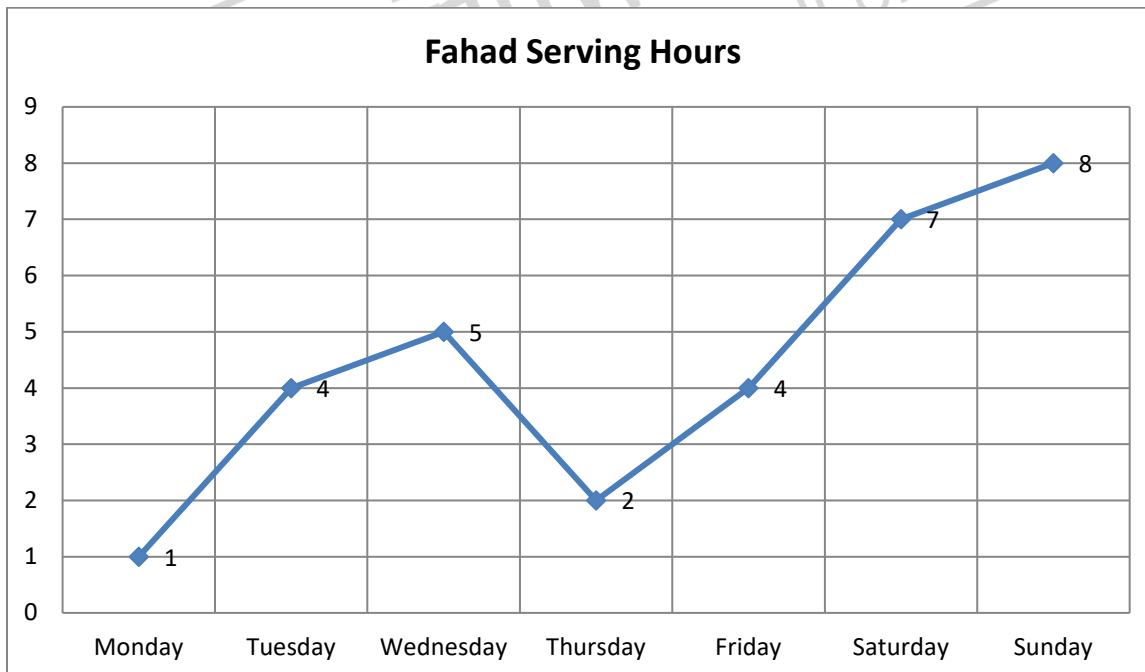
C



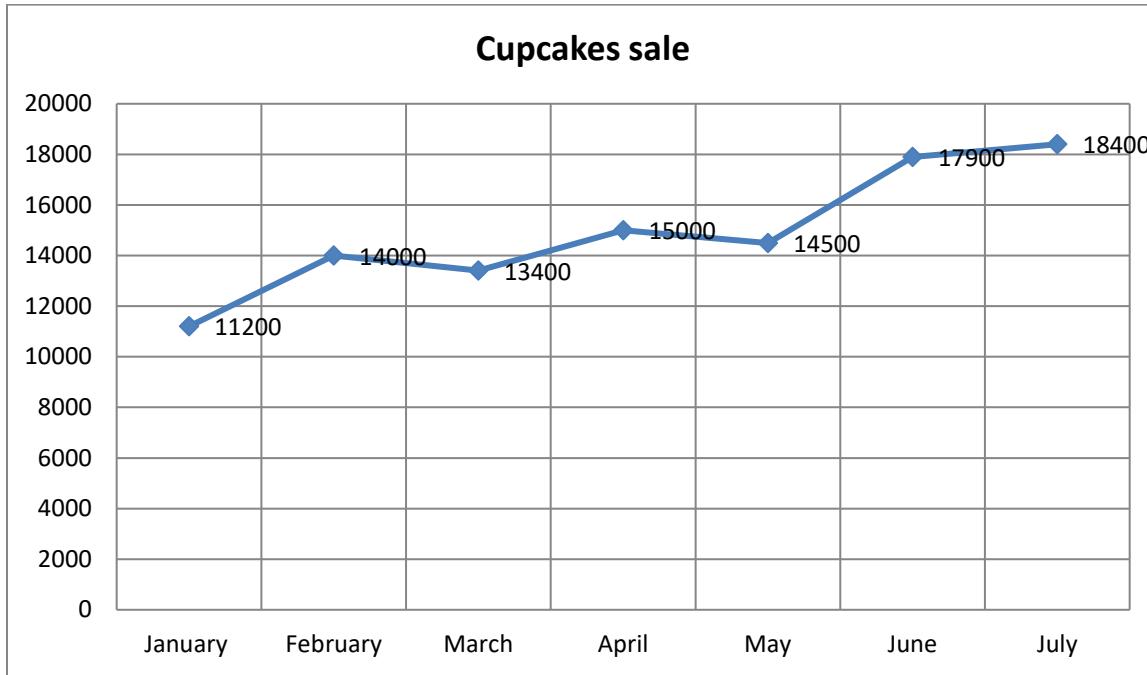
D



E



F



Exercise 10.3

A:

1. One time
2. October and January
3. Yes, two times
4. On November
5. On March

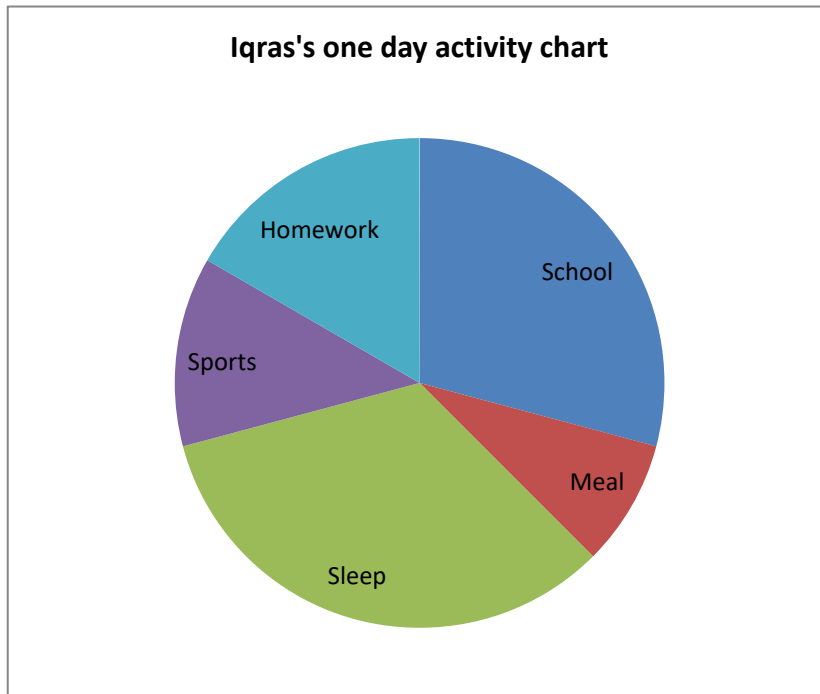
B:

1. December
2. January and March
3. February, July & September and April, June and October
4. 34
5. 5 in December

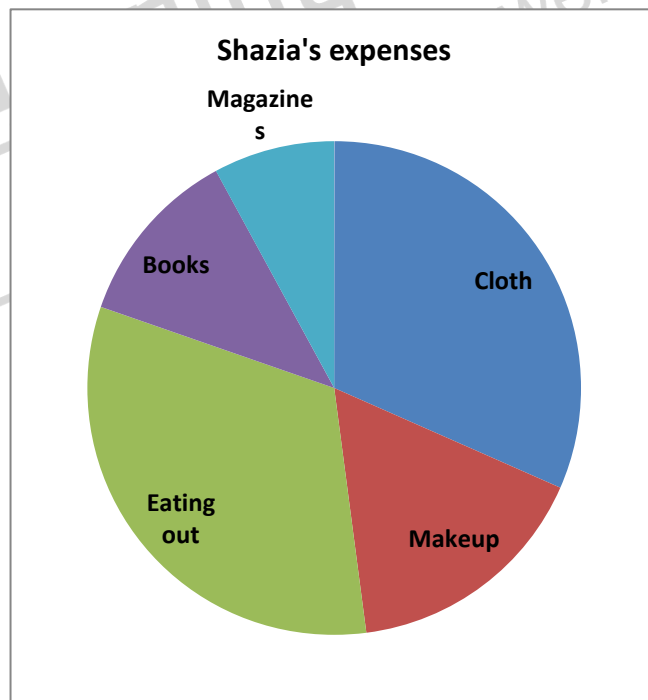


Exercise 10.4

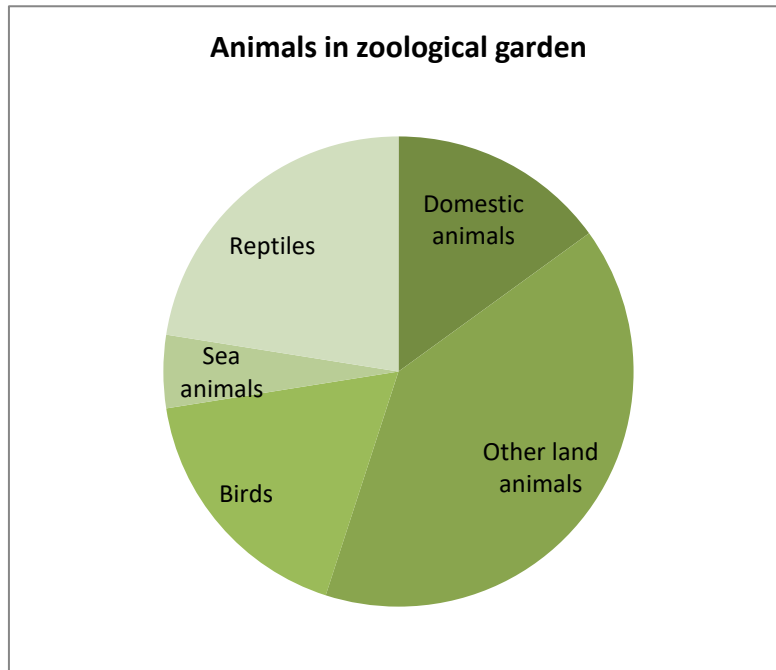
A



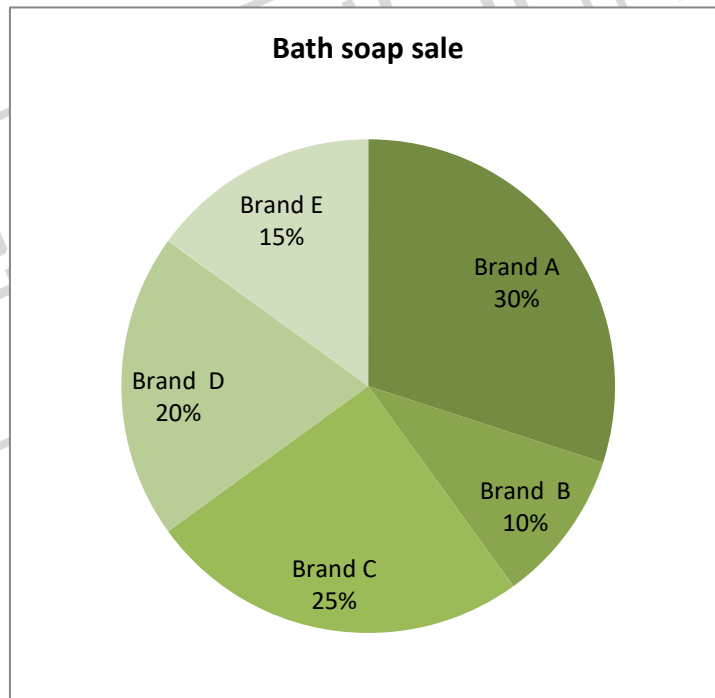
B



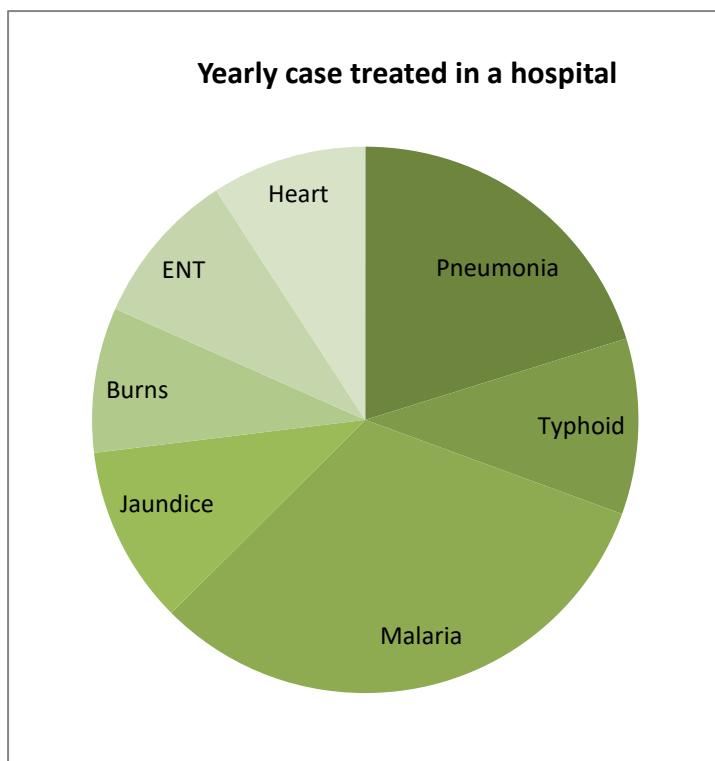
c



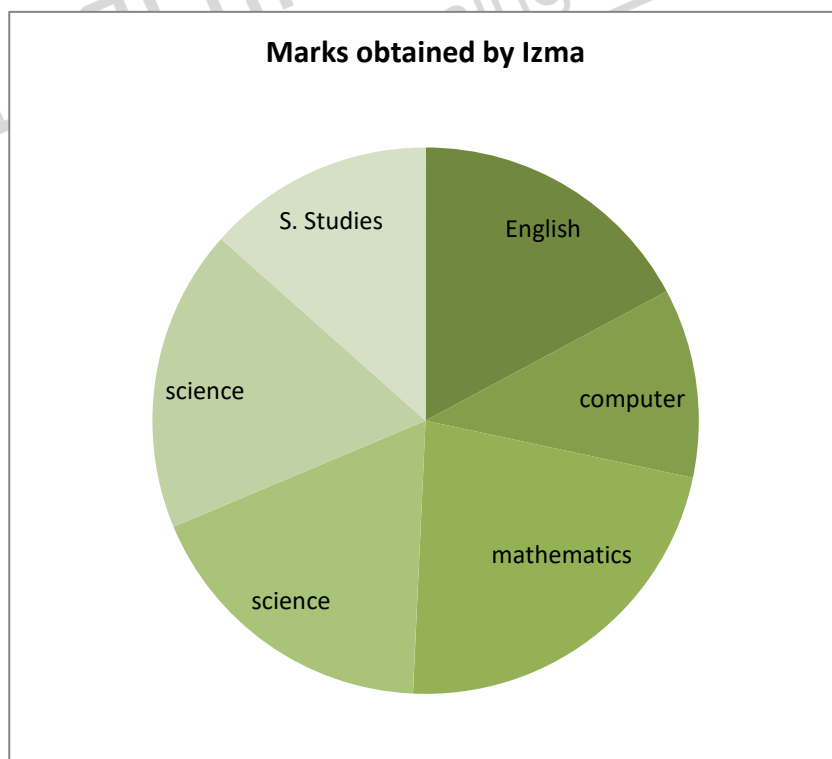
d



E



F

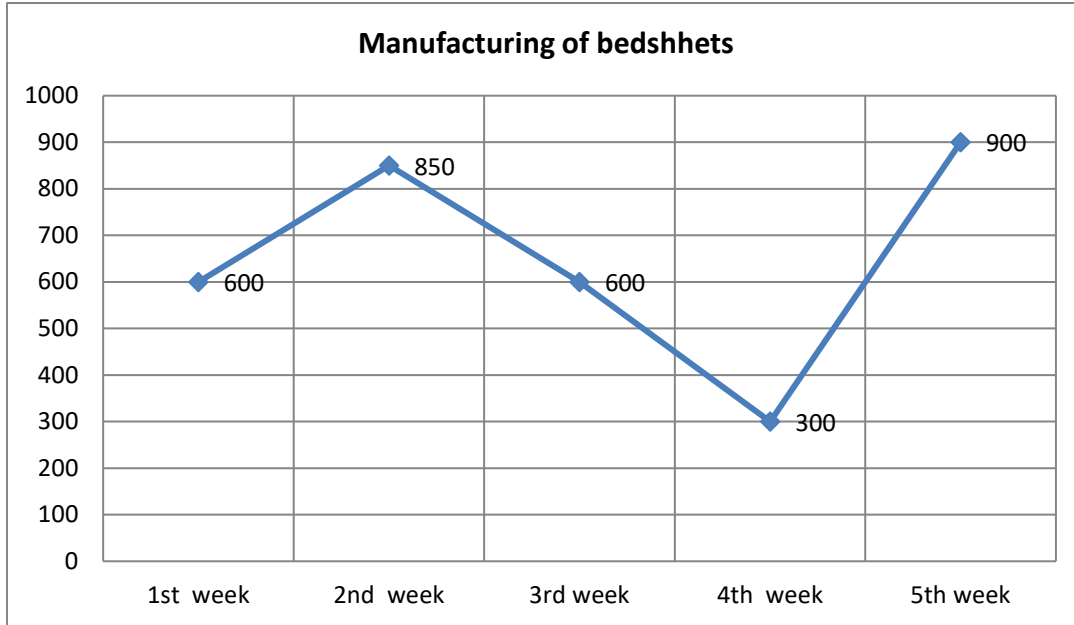


End of Chapter Exercises

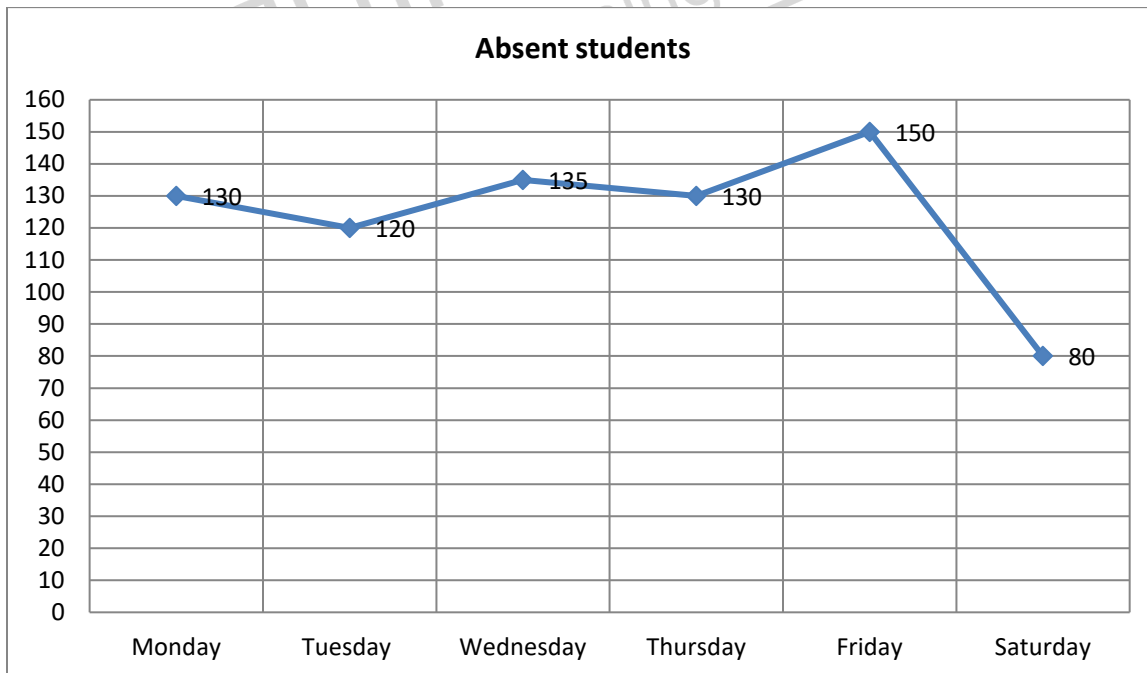
1.

- i. 1,000
- ii. French
- iii 400
- iv 200

2.



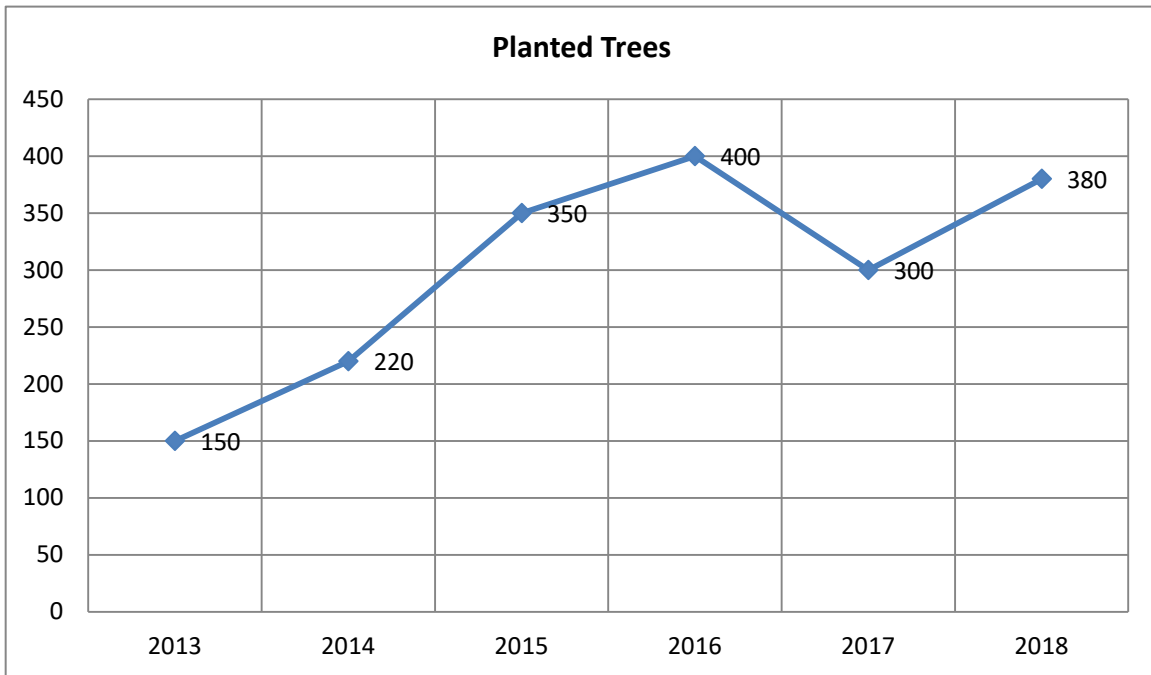
3.



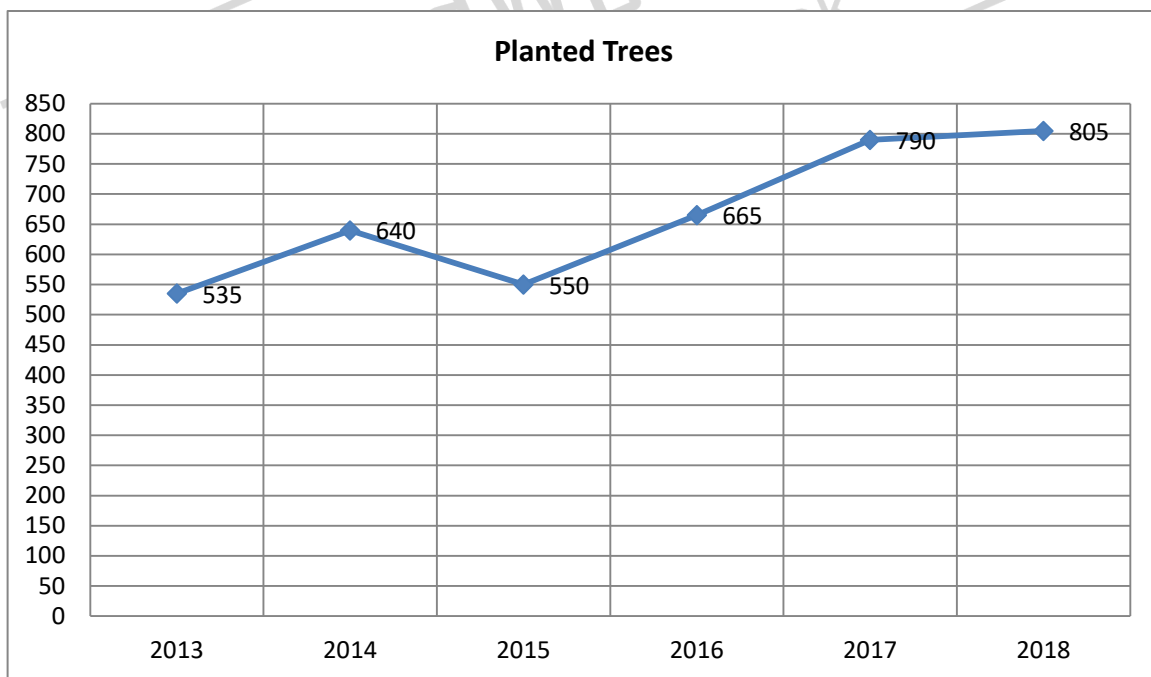
- a. Friday
- b. 280
- c. Monday and Thursday



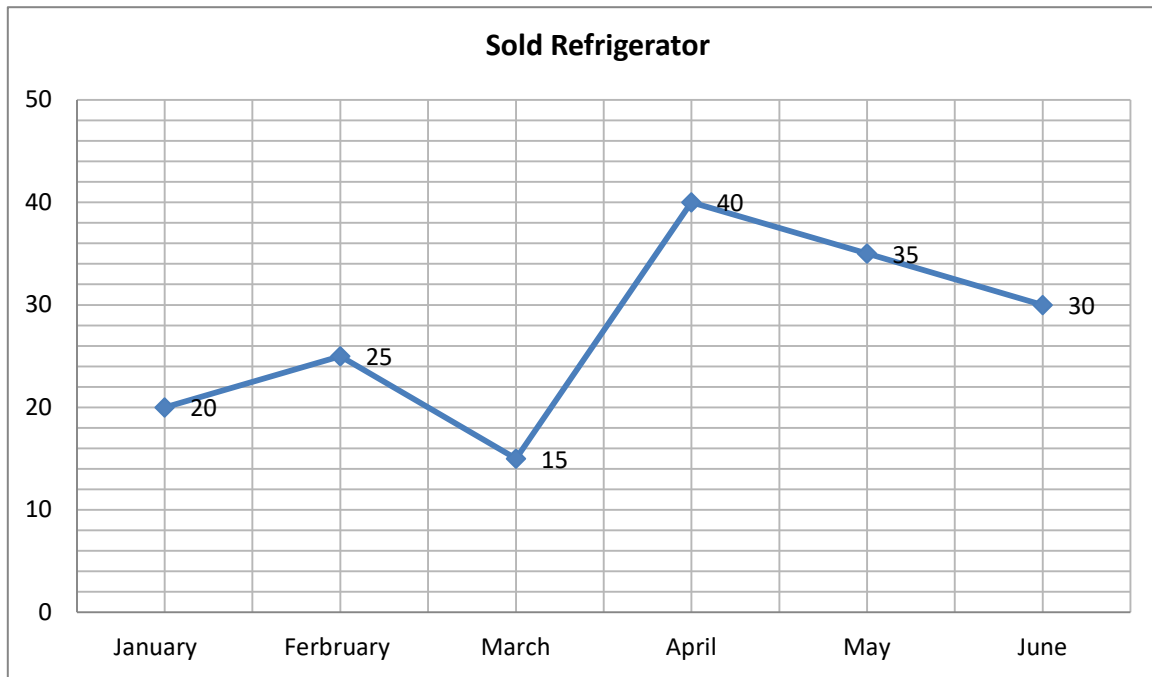
4.



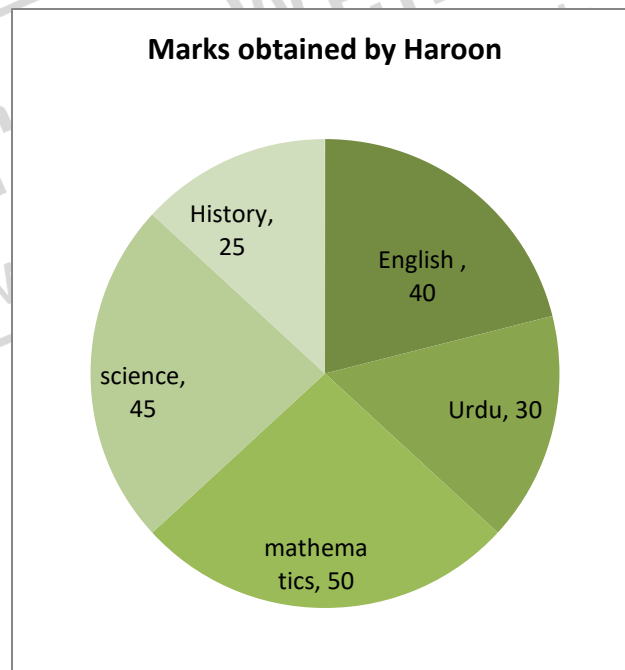
5.



6.



7.

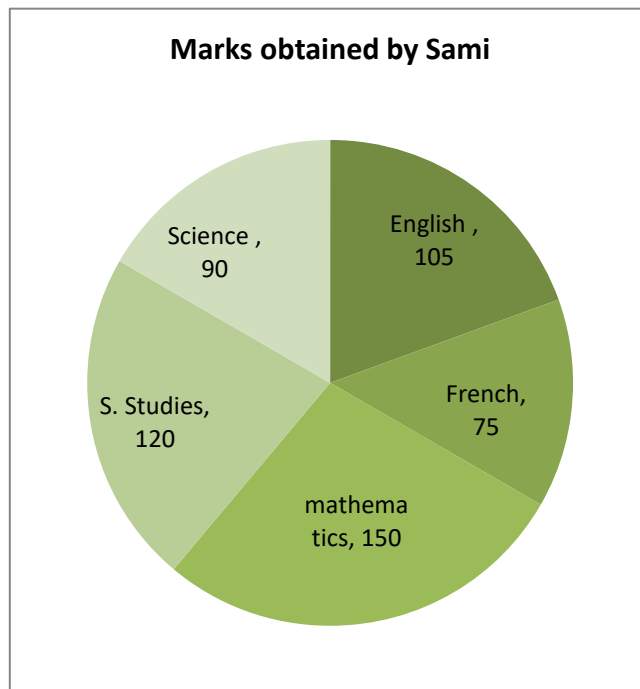


8. b

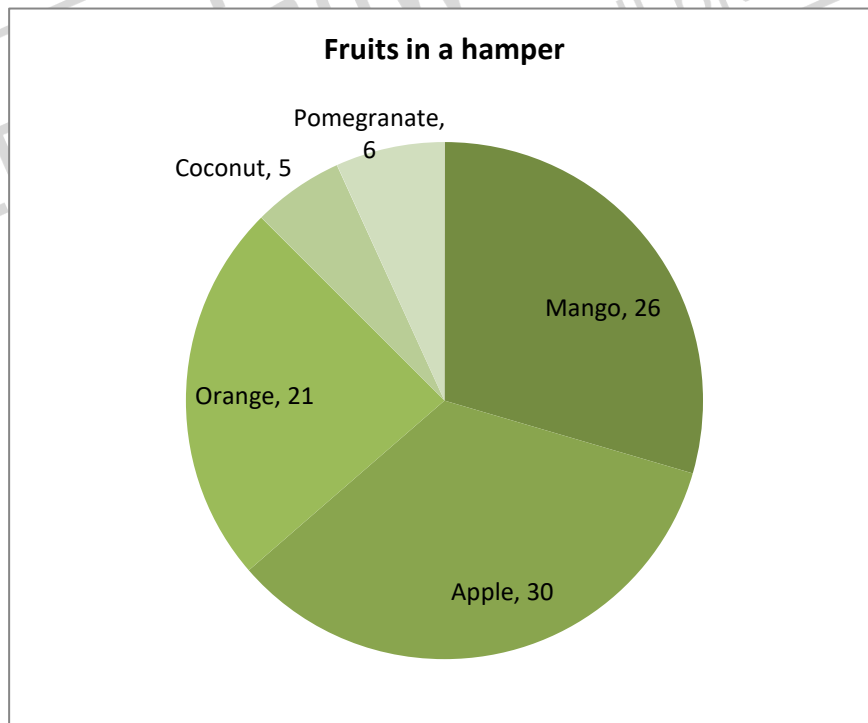
9. a

10. c

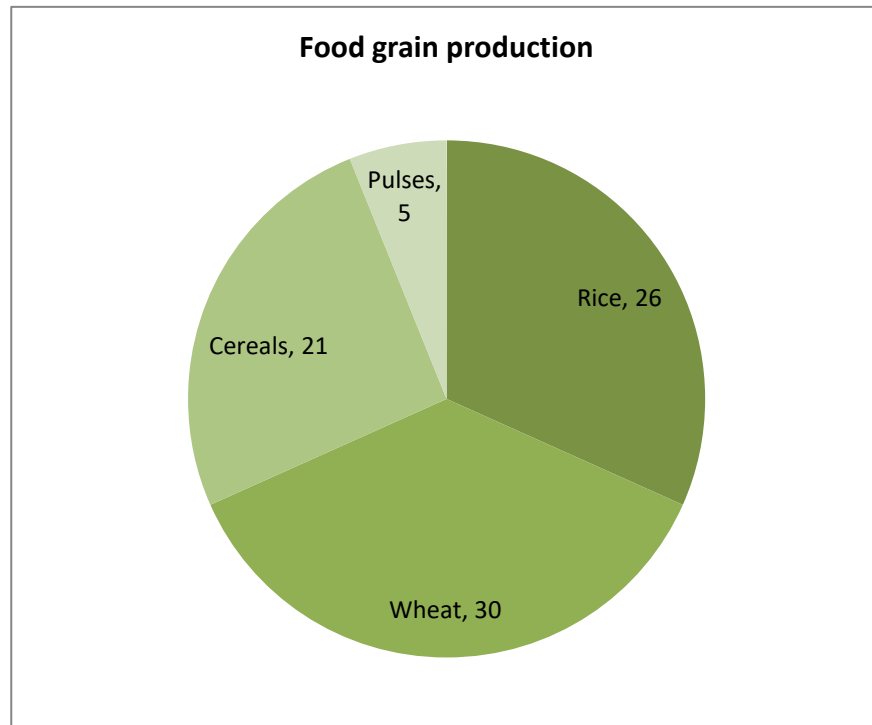
11.



12.



13.



14.

