Exercise-34

1. Mr. Ram Lohan bought the following items from Fashion World, Delhi.

Ans.

FASHION WORLD
Vikas Nagar, Delhi

Bill No. 631
Bill Date : 1-12-2010 PH: 09562224234
Name of Customer: Mr. Ram Lohan
Address of Customer: P/37, A Block, R.K. Purum, New Delhi

S. No	Item	Quantity	Price per unit (रु)	Amount (रु)
1.	Shirt	7	₹ 1360	₹ 9520
2.	Blazer	4	₹ 2600	₹ 10400
3.	Pullover	9	₹ 900	₹ 8100
4.	Jeans	13	₹ 1650	₹ 21450
5.	Saree	4	₹ 950	₹ 3800
Total (in figures)				₹ 53270
(In words): ₹ Fifty-three thousand two hundred seventy-only.				

Note: 1. Goods once sold will not be taken back.
2. E & OQ

For: **Fashion World**

2. Mrs. Saroj Devi bought the following items from Pizza Hut, Kanpur.

Ans.

PIZZA HUT
RAMPURI, KANPUR

Bill No. 035
Bill Date : 07- 07- 2010 PH: 09837272727
Name of Customer: Mrs Saroj Devi
Address of Customer: 36, Prem Prayag Colony, Kanpur

S. No	Item	Quantity	Price per unit (₹)	Amount (₹)
1.	Burger	12	₹ 19.75	₹ 237.00
2.	Dosa	8	₹ 38.50	₹ 308.00
3.	Pizza	18	₹ 270.50	₹ 4869.00
4.	Cold drinks	17	₹ 47.50	₹ 807.50
Total (in figures)				₹ 6221.50
(In words): Six thousand two hundred twenty-one rupees and fifty paise only.				

Note: 1. Goods once sold will not be taken back.
2. E & OQ

For: **Pizza Hut**

3. Mr. Praveen bought the following electric items from an electric shop. The name of the shop is Ganpati Electronics, Shastri Nagar, Agra.

Ans.

GANPATI ELECTRONICS
Shastri Nagar, Agra

Bill No. 621
Bill Date : 15-10-2010 PH: 09762121638
Name of Customer: Mr Praveen
Address of Customer: Ram Vatika, 54/8, Vivek Vihar, Agra

S. No	Item	Quantity	Price per unit (₹)	Amount (₹)
1.	Electric Iron	7	₹ 285.50	₹ 1998.50
2.	CFL	3	₹ 20.70	₹ 62.10
3.	Water Gyser	2	₹ 2320.00	₹ 4640.00
4.	Electric Tullu Pump	5	₹ 2110.00	₹ 10550.00
		Total (In figures)		₹ 17250.60
(In words) Seventeen thousand two hundred fifty rupees sixty paise only				

Note: 1. Goods once sold will not be taken back.
2. E & OQ

For: **Ganpati Electronics**

4. Mr. Raj Narain, D 270, Agra makes the following purchases from Rastogi General Store, Taj Mahal Road, Agra.

Ans. **RASTOGI GENERAL STORE**
Taj Mahal Road, Agra

Bill No. 448
Bill Date: 23-7-2010 PH: 08321692451
Name of Customer: Mr. Raj Narain
Address of Customer: D 270, Agra

S. No	Item	Quantity	Price per unit (₹)	Amount (₹)
1.	Washing Soap	12 bars	₹ 32.50/bar	₹ 390.00
2.	Tooth brush	20 pc	₹ 13.50/pc	₹ 270.00
3.	Surf	24 kg	₹ 37.50/kg	₹ 900.00
4.	Shaving cream	2 pc	₹ 22.75/pc	₹ 45.50
5.	Blade	1 packet	₹ 18.50/packet	₹ 18.50
6.	Bleen	4 kg	₹ 30.25/kg	₹ 121.00
7.	Key Ring	10 pc	₹ 14.50/pc	₹ 145.00
		Total (In figures)		₹ 1890.00
(In words) Rupees one thousand eight hundred ninety only				

Note: 1. Goods once sold will not be taken back.
2. E & OQ

For: **Rastogi General Store**

5. Kirti purchased some vegetables from Veg. Hut. Centeral Market. Shastri Nagar, Kordwar. The list of vegetables are as follows:

Ans. **VEG. HUT**
Central Market, Shastri Nagar, Kotdwar

Bill No. 146
Bill Date: 21-10-2010 PH: 09212314817
Name of Customer : Kirti Gupta
Address of Customer : L Block, Nehru Nagar, opp check point, Kotdwar

S. No	Item	Quantity	Price per unit (₹)	Amount (₹)
1.	Potatoes	17 kg	₹ 9.00	₹ 153.00
2.	Tomatoes	12 kg	₹ 240.00	₹ 2880.00
3.	Onions	7 kg	₹ 32.00	₹ 224.00
4.	Brinjal	11 kg	₹ 13.00	₹ 143.00
5.	Beans	2 kg	₹ 21.75	₹ 43.50
6.	Cabbage	18 kg	₹ 13.50	₹ 243.00
7.	Radish	6 kg	₹ 11.00	₹ 66.00
		Total (In figures)		₹ 1752.50
(In words) : Rupees one thousand seven hundred fifty-two fifty paise only.				

Note: 1. Goods once sold will not be taken back.
2. E & OQ

For: **Veg. Hut**

6. Darshan Singh purchased some daily use things from Sharma Stores, G.B. Road, Kanpur.

Ans.

SHARMA STORES
G.b. Road, Kanpur

Bill No. 004
Bill Date: 15-12-2010 PH:09021621148
Name of Customer: Mr Darshan Singh
Address of Customer: A/4 26, Opp Railway station, Kanpur

S. No	Item	Quantity	Price per unit (₹)	Amount (₹)
1.	Blade packs	6	₹ 10	₹ 60.00
2.	Pencil	5	₹ 2	₹ 10.00
3.	Notebook	4	₹ 7	₹ 28.00
4.	Pen	2	₹ 24	₹ 48.00
5.	Toy	3	₹ 48	₹ 144.00
6.	Chocolate	7	₹ 15	₹ 105.00
7.	Kite	1	₹ 2	₹ 2.00
	Total (In figures)			₹ 397.00
(In words) Rupees three hundred ninety-seven only.				

Note: 1. Goods once sold will not be taken back.
2. E & OQ

For: **Sharma Stores**

19 Average

Exercise- 35

1. Find the average of :

Ans. (a) Number of quantities = 6
Sum of all the numbers
$= 4 + 8 + 112 + 16 + 24 + 28 = 92$

$\therefore$ Average $= \dfrac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \dfrac{\cancel{92}^{46}}{\cancel{6}_{3}} = \dfrac{46}{3} = 15.33$

(b) Number of quantities = 7
Sum of all the numbers
$= 5 + 10 + 15 + 20 + 25 + 30 + 35$
$= 140$

$\therefore$ Average $= \dfrac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \dfrac{140}{7} = 20$

(c) Number of quantities = 5
Sum of all the numbers
$= 18 + 20 + 40 + 35 + 30 = 143$

$\therefore$ Average $= \dfrac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \dfrac{143}{5} = 28.6$

(d) Number of quantities = 6
Sum of all the numbers
$= 10 + 20 + 30 + 40 + 50 + 60 = 210$

$\therefore$ Average $= \dfrac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \dfrac{210^{\cancel{105}^{35}}}{\cancel{6}_{3}} = 35$

(e) Number of quantities = 5
Sum of all the numbers
$= 9.5 + 8.5 + 7.5 + 6.5 + 5.5 = 37.5$

$\therefore$ Average $= \dfrac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \dfrac{37.5}{5} = 7.5$

(f) Number of quantities = 7
Sum of all the numbers
$= 25 + 50 + 75 + 100 + 125 + 150$
$+ 175 = 700$

$\therefore$ Average $= \dfrac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \dfrac{700}{7}$

$= 100$

(g) Number of quantities = 8
Sum of all the numbers = 100 + 200 + 300 + 400 + 500 + 600 + 700 + 800 = 3600

$\therefore$ Average $= \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \frac{3600}{8} = 450$

(h) Number of quantities = 5
Sum of all the numbers = 1000 + 5000 + 10000 + 20000 + 30000 = 66000

$\therefore$ Average $= \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \frac{66000}{5} = 13200$

(i) Number of quantities = 11
Sum of all the numbers = 0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55

$\therefore$ Average $= \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \frac{55}{11} = 5$

(j) Number of quantities = 8
Sum of all the numbers = 31 + 41 + 51 + 61 + 71 + 81 + 91 + 101 = 528

$\therefore$ Average $= \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \frac{528}{8} = 66$

2. The ages of six boys are 14 yrs., $15\frac{1}{2}$ yrs., $16\frac{1}{2}$ yrs., 13 yrs., 15 yrs. and 18 yrs. respectively. Find the average age of 6 boys.

Sol. Number of quantities = 6
Total ages of six boys
$= 14\text{ yrs} + 15\frac{1}{2}\text{ yrs} + 16\frac{1}{2}\text{ yrs} + 13\text{ yrs} + 15\text{yrs} + 18\text{yrs} = 92\text{ yrs.}$

$\therefore$ Average $= \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \frac{\cancel{92}^{46}}{\cancel{6}_{3}} = 15\frac{1}{3}$ years.

3. Average salary of six workers is ₹ 4200. If manager's salary and salary of six workers is ₹ 37,700. Find the salary of manager?

Sol. Average salary of six workers = ₹ 4200
Total salary of six workers
= ₹ 4200 × 6 = ₹ 25200
Total salary of manager and six workers = ₹ 37,700

$\therefore$ Manager's salary = ₹ 37,700 – ₹ 25200
= ₹ 12500.

4. Average weight of 12 students and a teacher is 42 kg. The weight of the teacher is 66 kg. Find the average weight of the 12 students.

Sol. Average weight of 12 Students and teacher = 42 kg
Total weight = 42 kg × (12 + 1) kg
= 42 kg × 13 = 546 kg
Weight of teacher = 66kg
Total weight of 12 students
= Total weight of all – Weight of teacher
= 546 – 66 kg = 480 kg

$\therefore$ Average weight $= \frac{\text{Total weight}}{\text{number of quantities}}$

$= \frac{480}{12}\text{ kg} = 40\text{ kg}$

5. In an examination, Hemant scored 98 marks in Maths, 99 marks in Science, 97 marks in English, 98 marks in Social Study, 89 marks in Drawing and 75 marks in Hindi. Find his average marks in all six subjects.

Sol. Number of quantities = 6
Total marks
= 98 + 99 + 97 + 98 + 89 + 75 = 556

$\therefore$ Average $= \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$

$= \frac{\cancel{556}^{278}}{\cancel{6}_{3}} = \frac{278}{3} = 92.67$

6. The average of 15 numbers is 80.8. Find the sum of these 15 numbers.

Sol. Average = 80.8
Number of quantities = 15
Sum = Average × number of quantities
= 80.8 × 15 = 1212

7. In an office, 15 employees get salary of ₹ 4540.00 and 5 employees get ₹ 8730.00 per month. Find the average salary of an employee in the office.

Sol. Total salary of 15 employees
= Average × number of quantities
= ₹ 4540 × 15 = ₹ 68100
Total salary of 5 employees
= Average × number of quantities
= ₹ 8730 × 5 = ₹ 43650

Sum of salaries $= ₹\,68100 + ₹\,43650$
$= ₹\,111750$

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$$
$$= \frac{111750}{20} = ₹5587.50$$

8. The temperature (in centrigrade) of a town during a week was 41, 39.5, 40, 37.5, 36, 35.5 and 40. What was the average daily temperature of the town for the week?

Sol. Number of quantities = 7
Sum of all numbers = 41 + 39.5 + 40 + 37.5 + 36 + 35.5 + 40 = 269.5

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$$
$$= \frac{269.5}{7} = 38.5$$

9. The weights of 5 girls in a group are 38 kg, 600 g, 43 kg 800 g, 42 kg 400 g, 50 kg 300 g and 46 kg 500 g. Find the average weight of a girl in the group.

Sol. Number of quantities = 5
Sum of all numbers = 38 kg + 600 g + 800g + 50 kg 300 g + 46 kg 500 g
= 38.0 + .600 + 43.800 + 42.400 + 50.300 + 46.500 kg
= 221.600

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$$
$$= \frac{221.600}{5}$$
$$= 44.320 = 44\text{ kg }320\text{ g}$$

10. 10 kg of sugar is bought at ₹ 56 per kg, 8 kg of sugar at ₹ 65 per kg and 12 kg of sugar at ₹ 60 per kg. Find the average cost of sugar per kg.

Sol. Number of quantities = 10 + 8 + 12 = 30
Sum of all numbers
$= (10 \times ₹56) + (8 \times ₹65) + (12 \times ₹\,60)$
$= ₹\,560 + ₹\,520 + ₹720 = ₹\,1800$

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$$
$$= ₹\frac{1800}{30} = ₹\,60$$

11. The attendance of the boys of schools for the first two days of a week was 500 per day, for the next three days 200 daily and for the sixth day 184. What was the average number of boys present per day?

Sol. Nunber of quantities = 6
Sum of all numbers
$= (2 \times 500) + (3 \times 200) + 184 = 1784$

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$$
$$= \frac{1784^{892}}{6_3} = \frac{892}{3}$$
$$= 297.33$$

12. Find the average of the following :

Sol. (a) Number of quantities = 6
Sum of all numbers
$= 2 + 4 + 6 + 8 + 10 + 12 = 42$

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{number of quantities}}$$
$$= \frac{42}{6} = 7$$

(b) Number of quantities = 4
Sum of all numbers = 2 + 3 + 5 + 7 = 17

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$
$$= \frac{17}{4} = 4.25$$

(c) Number of quantities = 4
Sum of all numbers = 1 + 3 + 5 + 7 = 16

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$
$$= \frac{16}{4} = 4$$

(d) Number of quantities = 3
Sum of all numbers = 4 + 6 + 8 = 18

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$
$$= \frac{18}{3} = 6$$

(e) Number of quantities = 5
Sum of all number
$= 1 + 2 + 3 + 4 + 5 = 15$

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$
$$= \frac{15}{5} = 3$$

(f) Number of quantities = 6
Sum of all number
$= 1 + 3 + 5 + 7 + 9 + 11 = 36$

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$
$$= \frac{36}{3} = 6$$

(g) Number of quantities = 7
Sum of all numbers
= 2 + 4 + 6 + 8 + 10 + 12 + 14 = 56

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$

$$= \frac{56}{7} = 8$$

20 Speed and Distance

Exercise - 36

1. A car travels 250 km in 5 hours, find its speed.

Sol. Distance covered by car = 250 km
Time taken = 5 hours

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{250}{5}$$

= 50 km/ hour

2. Convert 40 metres per second in kilometre per hour.

Sol. ∵ Metres in 1 km = 1000 mtrs
Seconds in 1 hr = 3600 sec
∴ To convert m/sec into km/hr we multiply the given number with 3600 and divide it by 1000

$$\Rightarrow \frac{40 \times 3600}{1000} = 4 \times 36 = 144 \text{ km/hr}$$

3. Convert the speed 36 km/hour in metres per second.

Sol. To convert km/hr into m/sec we multiply the given number by 1000 and divide it by 3600

$$\Rightarrow \frac{{}^{1}\cancel{36} \times 10\cancel{00}}{\cancel{3600}} = 10 \text{ metre per second.}$$

4. A tourist bus leaves Delhi at 2 pm and reaches Ajmer the same day at 11 pm. The distance between two stations is 360 km and total time for stoppage is 1 hr between these two stations. Find the speed of the tourist bus.

Sol. Distance between two stations
= 360 km
Time taken distance
= (11pm – 2 pm) + 1 hr
to cover the = 9hr – 1 hr = 10 hr

$$\because \quad \text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{360}{8}$$

= 36 km/hr

5. A train leaves Meerut at 1900 hours and after travelling a distance 210 km reaches a station at 0015 hours. What is the speed of the train?

Ans. Distance between two stations
= 210 km
Time taken to cover the distance
= (2400 hours – 1900 hours)
+ 0015 hours
= 5 hrs + 015 hrs = 5 hrs 15 minutes

$$= 5\frac{1}{4} \text{ hours} = \frac{21}{4} \text{ hours}$$

$$\because \quad \text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{210}{21/4}$$

$$= \frac{\cancel{210}^{10} \times 4}{\cancel{21}} = 40 \text{ km/hr}$$

6. A car travels 500 km in 5 hours. Find its speed?

Sol. Distance covered by car = 500 km
Time taken to cover the distance
= 5 hours

$$\because \quad \text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{500}{5}$$

= 100 km/hr

7. A trains runs at the speed of 40 km/hour. How much time will it take to cover 800 metres?

Sol. Distance to be covered by train
= 800 metres
Speed of train = 40 km/hr
Converting km/hr into m/see we get

$$= \frac{{}^{10}\cancel{40} \times 10\cancel{00}}{{}_{9}\cancel{3600}} = \frac{100}{9} \text{ m/sec}$$

$$\because \quad \text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{800}{100\backslash 9} = \frac{800 \times 9}{100}$$

= 8 × 9 = 72 sec
= 1min 12sec.

8. A horse runs at a speed of 20 km/hour. How much time will it take to cover a distance of 200 km?

Sol. Distance to be covered by horse
= 200 km
Speed of horse = 20 km/hr

$$\therefore \quad \text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{200}{20} = 10 \text{ hrs.}$$

9. A bus runs at the speed of 40 km/hr and it runs nonstop for 6 hours. Find the distance covered by the bus.

Sol. Time taken by bus = 6 hrs
Speed to bus = 40 km/hr

$\therefore$ Distance = Speed × Time
= 40 × 6 = 240 km

10. A cyclist moves with a speed of 25 metres per minute. What time will the cyclist take to move a distance of 200 metres?

Sol. Distance covered = 200 metre
Speed of cyclist = 25 m/min

$\therefore$ Time $= \frac{\text{Distance}}{\text{Speed}} = \frac{200}{25} = 8$ min.

11. A motor-cycle runs at a speed of 80 km/hour. How much time will it take to move a distance of 320 km?

Sol. Distance covered by motor-cycle
= 320 km
Speed of motor-cycle = 80 km/hr

$\therefore$ Time $= \frac{\text{Distance}}{\text{Speed}} = \frac{320}{80} = 4$ hours.

12. The average speed of an Express train is 95 km per hour from Meerut to Dehradun. The train takes $4\frac{1}{5}$ hours to travel from Meerut to Dehradun. What is the distance between Meerut to Dehradun?

Sol. Speed of Express train
= 95 km per hour
Time taken to cover the distance
$= 4\frac{1}{5}$ hours $= \frac{21}{5}$ hours

$\therefore$ Distance = Speed × Time

$= 95_{19} \times \frac{21}{5} = 19 \times 21 = 399$ kms.

13. The speed of a train is 75 km per hour. It travels continuously for 5 hours. What is the distance travelled by the train?

Sol. Speed of train = 75 km per hour
Time taken to cover the distance
= 5 hours

$\therefore$ Distance covered = Speed × Time
= 75 × 5 = 375 kms.

14. A train travels at a speed of 30 m per second. Find its speed in km per hour?

Sol. Speed of train in m/sec = 30 m/sec
Speed of train in km/hr $= \frac{30 \times 3600}{1000}$
= 108 km/hr

15. The speed of a car is 45 km per hour. Find its speed in metres per second.

Sol. Speed of car in km/hr = 45 km/hr
Speed of car in metres per second

$= \frac{\cancel{45}^{5} \times \cancel{1000}}{\cancel{3600}_{4}} = \frac{50}{4} = 12.5$ m/sec.

16. Manoj travelled a distance of 315 km in 3 hours by a car. Find the speed of the car.

Sol. Distance travelled by Manoj = 215 km
Time taken to cover the distance
= 3 hours
Now, Speed $= \frac{\text{Distance}}{\text{Time}} = \frac{315}{3}$
= 105 km/hr

17. The distance between Delhi and Mumbai is 1184 km. Golden Temple Express leaves Meerut at 5.30 am and reaches Mumbai at 10.50 pm. The total time taken for stoppage between Meerut to Mumbai is 1 hrs 20 minutes. Find the speed and the average speed of the train.

Sol. Distance between Delhi and Mumbai
= 1184 km
Total time taken to cover the distance
= (Arrival time – Departure time)
= (10.50 p.m. – 5.30 a.m.)
Converting into 24 hr clock we get
= (2250 hr – 0530 hrs)
= 1720 hrs $= 17\frac{1}{3}$ hrs $= \frac{52}{3}$ hrs

$\because$ Speed $= \frac{\text{Distance}}{\text{Time}} = \frac{1184}{52/3}$

$= \frac{1184 \times 3}{52} = 68.31$ km/hr

$\therefore$ Speed = 68.31 km/hr

18. An aeroplane covers 2157.5 km distance in certain time. If the speed of the aeroplane is 863 km/hr find the time of journey.

Sol. Distance covered by aeroplane
= 2157.5 km
Speed of aeroplane = 863 km/hr
We know that time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{2157.5}{863} = 2.5 = 2\frac{1}{2}$ hrs.

19. The speed of a cyclist is 175 metre per minute. How much time will he take to run 2.0 kilometres?

Sol. Distance to be covered = 2.0km.
=2000 metre
Speed of cyclist
= 175 metre per minute

We know that time $= \frac{\text{Distance}}{\text{Speed}} = \frac{2000}{175}$

$= 11.42$ min.

20. Vaibhav travels 6.2 km by his motorcycle in 6 minutes. What is his speed?

Sol. Distance covered by vaibhar

$= 6.2$ km $= 6200$ m

Time taken to cover the distance

$= 6$ mintues

We know that speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{6200}{6} = 1033.33$ m./min

21. Suman is travelling by a car moving at 50 km/hour. How far does she travel in 3 hours?

Sol. Speed of car $= 50$ km/hour

Time taken to cover the distance

$= 3$ hours

We know that,

Distance $=$ Speed $\times$ Time

$= 50 \times 3 = 150$ kms.

22. Find the distance covered by a train moving at a speed of 90 km/hour in 3 hours.

Sol. Speed of train $= 90$ km/hr

Time taken to cover the distance

$= 3$ hours

We know that

distance $=$ speed $\times$ time

$= 90 \times 3 = 270$ kms.

23. A girl walks from her house to her school. If she walks at a speed of 3 km per hour, she reaches her school in 45 minutes. How far the school is from her house?

Sol. Speed of girl $= 3$ km/hr

Time taken $= 45$ minutes

Converting speed into m/min we get,

$\frac{\cancel{3} \times \cancel{1000}^{50}}{\cancel{60}_{\cancel{3}}} = 50$ m/min

We know that, distance $=$ speed $\times$ time

$= 50 \times 45 = 2250$ metres $= 2.250$ km

24. An aeroplane travels a distance of 1200 km in 2 hours. What is its speed?

Sol. Distance covered by aeroplane

$= 1200$ km

Time taken to cover the distance

$= 2$ hours

We know that speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{1200}{2}$

$= 600$ km/hrs.

25. The speed of a scooter is 25 km/hour. Change it into metre per minute.

Sol. Speed of scooter in km/hr $= 25$km/hour

Speed of scooter in metre/min

$= \frac{25 \times \cancel{1000}^{5}}{3\cancel{60}} = \frac{25 \times 50}{3}$

$= \frac{1250}{3} = 416.67$ m/min

26. A car travels at 55 km/hour. How much time will it take to cover 120 km?

Sol. Distance to be covered $= 120$ km

Speed of car $= 55$ km/hr

We know that time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{120}{55} = 2.18$ hrs

27. Nishu has to go to the station which is 25 kms away. If she cycles at a speed of 10 km/ hour, how much time will she take to reach the station?

Sol. Distance to be covered $= 25$km

Speed of cycle $= 10$ km/hr

We know that time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{25}{10}$

$= 2.5$

$= 2$ hours 30 minutes

28. A car has to cover 300 km in 5 hours. For the first three hours it travels at a speed of 60 km/hour. What should be its speed after that to reach the destination in the desired time?

Sol. Distance to be covered $= 300$ km

Time taken $= 5$ hours

We know that time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{300}{5}$

$= 60$ km/hr

Speed of the car for the first three hours

$= 60$ km/hr

Speed required to cover the distance in desired time $= 60$ km/hr

Worksheet

Look at the table and calculate :

(a) About how much fish in all will each boat bring in three trips?

Ans. 18810 kg

(b) About how far can a motor boat go in five hours?

Ans. 125 km

(c) If a long tail boat has to travel 48 km how long will it take?

Ans. 4 hours

21 Lines and Angles

Exercise - 37

A. Construct line segments of given length :

Ans.

1. 8.5 cm

A 8.5 cm B

2. 2.6 cm

A 2.6 cm B

3. 3.9 cm

A 3.9 cm B

4. 7 cm 8 mm

A 7 cm 8 mm B

5. 9 cm 10 mm

A 9 cm 10 mm B

6. 2.8 m

A 2.8 cm B

7. 9.0 cm

A 9.0 cm B

8. 11.5 mm

A 11.5 mm B

9. 17.8 cm

A 17.8 cm B

10. 20 m

A 20 m B

B. Compare using a divider, which is longer :

Ans. GH is longer

C. How many line segments join any two given points?

Ans. 2

D. How many millimetres are there in a centimetre?

Ans. 10 mm

E. Which are correct :

Ans. (b) and (d)

Exercise - 38

1. Measure the following angles and write their names also :

Ans.
(a) 95°; Obtuse angle
(b) 58°; Acute angle
(c) 90°; Right angle
(d) 90°; Right angle
(e) 310°; Reflex angle
(f) 108°; Obtuse angle

2. Measure and identify whether it is acute, right, obtuse, straight or reflex angle :

Ans.
(a) 95°; Obtuse
(b) 115°; Acute
(c) 255°; Reflex angle
(d) 180°; Straight angle
(e) 45°; Acute angle
(f) 90°; Right angle

3. Classify each angle as acute, obtuse, right, straight or reflex angle :

Ans.
(a) Obtuse angle (b) Obtuse angle
(c) Straight angle (d) Reflex angle
(e) Acute angle (f) Obtuse angle
(g) Right angle (h) Reflex angle
(i) Acute angle (j) Acute angle
(k) Reflex andgle (l) Acute angle
(m) Obtuse angle (n) Obtuse angle
(o) Acute angle (p) Acute angle

4. Fill in the blanks using help box :

Ans.
(a) A ray has **only one end point** .
(b) A line cannot **be drawn on paper**.
(c) A line has **no definite length**.
(d) A wall of a room **represents a part of plane**.
(e) A line segment has **a definite length.**
(f) A line-segment is a part **of a line**.
(g) AB represent **a ray** .
(h) A line-segment has **two end points** .

5. Write True or False for the following statements :

Ans.
(a) A reflex angle is more than 180°.
True
(b) An acute angle is less than 90°.
Ture

(c) A reflex angle is greater than 90°. **True**

(d) A right angle is of 90°. **True**

(e) A straight angle is equal to 170°. **False**

(f) An obtuse angle is more than 180°. **False**

Exercise - 39

1. Which of the following pairs of angles are complementary :

Ans. (a) 35°, 55° (c) 25°, 65°
(f) 15°, 75°

2. Write the complement of each of the following angles :

Ans. (a) 66° (b) 72° (c) 27° (d) 20°
(e) 9° (f) 13° (g) 47° (h) 77°

3. Which of the following pairs of angles are supplementary :

Ans. (a), (b), (c), (d)

4. Write the suppliment of each of the following angles :

Ans. (a) 70° (b) 30° (c) 105° (d) 165°
(e) 43° (f) 35° (g) 156° (h) 116°

5. Name all the pairs of adjacent angles in each of the following figures :

Ans. (a) $\angle ABD; \angle DBC$
(b) $\angle AOD; \angle DOB$
(c) $\angle AOC; \angle COB, \angle DOA; \angle AOC, \angle DOB; \angle BOC$

6. Name all the pairs of vertically opposite angles in each of the following figures :

Ans. (a) $\angle AOB, \angle DOE, \angle BOC, \angle EOF, \angle AOF, \angle COD$
(b) $\angle AOD, \angle BOC, \angle AOB, \angle COD$
(c) $\angle 1, \angle 4, \angle 2, \angle 3, \angle 7, \angle 6, \angle 5, \angle 8$
(d) $\angle AOC; \angle DOB, \angle AOD; \angle COB$

7. Write the measure of opposite angles in each of the following figures :

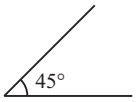
Ans. (a) 45°, 135°, 135°
(b) 65°, 115°, 165°

8. Name the pairs of :

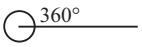
Ans. (a) $\angle BOD, \angle DOC$
(b) $\angle AOD, \angle DOB, \angle AOC, \angle COB$
(c) $\angle BOD, \angle DOC, \angle AOC, \angle COB, \angle AOD, \angle DOB, \angle AOC, \angle COD$

9. Draw the following angles and give definition also :

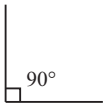
Ans. (a) **Acute Angle :** Angle whose measure is less than 90° is called an acute angle.



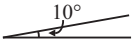
(b) **360° Complete Angle:** An angle whose measure is equal to 360° is called a complete angle.



(c) **Right Angle:** An angle whose measure is equal to 90° is called a right angle.

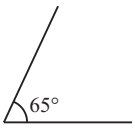


(d) **Acute Angle :** Angle whose measure is less than 90° is called an acute angle.



(e) **Straight Angle :** An angle whose measurment is called a straight angle.

(f) **Acute Angle :** Angle whose measure is less than 90° is called an acute angle.



10. Fill in the blanks :

Ans. (a) An angle whose measure is less than 90° is called an **acute** angle.
(b) An angle whose measure is 90° is called an **right** angle.
(c) An angle whose measure is more than 90° is called an **obtuse** angle.
(d) The measure of a straight angle is **180°**.
(e) The sum of the measures of two complementary angles is **90°** .
(f) The sum of the measures of two

Exercise- 40

1. Name the vertices, sides and angles of each of the following triangles :

Ans. (a) Vertices – A,B,C;
Sides– AB, BC, CA;
Angles – $\angle A \angle B \angle C$

(b) Vertices – P, Q, R;
Sides– PQ, QR, PR;
Angles – $\angle P, \angle Q, \angle R$

(c) Vertices – L, M, N;
Sides – LM, MN, LN;
Angles – $\angle L, \angle M, \angle N$

2. Is a triangle possible by given sides :

Ans. (a) 8 cm, 7 cm, 10 cm
Adding up the sides, we get
$\Rightarrow$ 8 cm, + 7 cm = 15 cm > 10 cm
8 cm + 10 cm = 18 cm > 7 cm
7 cm + 10 cm = 17 cm > 8 cm
$\because$ Measure of two sides is greater than third side
$\therefore$ Yes, triangle is possible

(b) 5 cm, 3 cm, 8 cm
Adding up the sides, we get,
5 cm+ 3 cm = 8 = 8 cm
5 cm + 8 cm = 13 cm > 3 cm
3 cm + 8 cm = 11 cm > 5 cm
$\because$ Measure of two sides = third side
$\therefore$ Triangle is not possible.

(c) 5 cm, 4 cm, 12 cm
Adding up the sides, we get,
5 cm + 4 cm = 9 cm < 12 cm
$\therefore$ Triangle is not possible

(d) 15 cm, 12 cm, 20 cm
Adding the sides, we get,
15 cm + 12 cm + 27 cm > 20 cm
12 cm + 20 cm +32 cm > 15 cm
15 cm + 20 cm = 35 cm > 12 cm
$\because$ Measure of two sides is greater than the third side
$\therefore$ Triangle is possible

(e) 15 cm, 13 cm, 18 cm
Adding the side, we get,
15 cm + 13 cm = 28 cm > 18 cm
15 cm + 18 cm = 33 cm > 13 cm
13 cm + 18 cm = 31 cm > 15 cm
$\because$ Measure of two sides is greater than the third side
$\therefore$ Triangle is possible

(f) 12 cm, 12 cm, 12 cm
$\because$ All sides are equal
$\therefore$ Triangle is possible

3. State whether the triangle is scalene, isosceles or equilateral :

Ans. (a) Two sides are equal so, isoceles
(b) All sides are equal so, equilateral
(c) All sides are unequal so, scalene
(d) Two sides are equal so, isoceles
(e) All sides are equal so, equilateral
(f) All sides are unequal so, scalene

4. Is a triangle possible with given groups of angles are :

Ans. (a) $\because$ $90° + 80° + 30° = 200°$ $\therefore$ No
(b) $\because$ $135° + 15° + 40° = 190°$ $\therefore$ No
(c) $\because$ $80° + 90° + 20° = 190°$ $\therefore$ No
(d) $\because$ $120° + 25° + 35° = 180°$ $\therefore$ Yes

5. Classify the following triangles with respect to their angles :

Ans. (a) acute - angled triangle
(b) acute - angled triangle
(c) obtuse - angled triangle
(d) right - angled triangle
(e) right - angled triangle
(f) obtuse - angled triangle

6. Find unknown angles :

Ans. (a) $\angle A = 180° - \angle B + \angle C$
$\Rightarrow$ $= 180° - (40° + 120°)$
$\Rightarrow$ $\angle A = 180° - 160° = 20°$
$\therefore$ $\angle A = 20°$

(b) $\angle R = 180° - (\angle P + \angle Q)$
$\angle R = 180° - (50° + 40°)$
$= 180° - 90° = 90°$
$\therefore$ $\angle R = 90°$

(c) $\angle M = 180° - (\angle N + \angle P)$
$= 180° - (80° + 50°)$
$= 180° - 130° = 50°$
$\therefore$ $\angle M = 50°$

(d) $\angle E = 180° (\angle D + \angle P)$
$= 180° (75° + 45°)$
$= 180° - 120° = 60°$
$\therefore$ $\angle E = 60°$

(e) $\angle P = 180° - (\angle L + \angle M)$
$= 180° - (55° + 85°)$
$= 180° - 140° = 40°$
$\therefore$ $\angle P = 40°$

7. The two angles of a triangle measure 80° and 45° respectively. What is the measure of third angle?

Ans. ∵ Sum of all angles in a triangle = 180°
Measures of angles given = 80°, 45°
Sum of angles given = 80° + 45° = 125°
∴ Third angle
= 180° – measure of two angles
= 180° – 125° = 55°
∴ The measure of third angle is 55°

8. All the measure of angles of a triangle are equal, find each angle?

Ans. Each angle = $\frac{180°}{3}$ = 60°.

9. In a right-angled triangle, if one angle is of 40°, find the third angle?

Ans. In a right-angled triangle one angle is of 90°
Hence the third angle
= 180° – (90° + 40°)
= 180° – 130° = 50°

10. Find the measure of each of the two angles of an isosceles right angled triangle?

Ans. In an isoceles right angled triangle two angle are of equal measurement and third angle is right angle.
So two angles = (180° – 90°) ÷ 2
= 90° ÷ 2 = 45°
∴ Two angles are of 45° each.

11. In an isosceles triangle if one of the equal angles is 50°, find the third angle.

Ans. In isosceles triangle two sides are of equal sides
So third angle = 180° – (50° + 50°)
= 180° – 100° = 80°
∴ The third angle is of 80°.

12. In an isosceles triangle if measure of one angle is 70°, find the measure of each of the equal angle.

Ans. Measurement of all the sides = 180°
Measure of one angle = 70°
Measure of each of the equal angle
= (180° – 70°) ÷ 2
= 110° ÷ 2 = 55°
∴ Each of the equal angle measure 55°.

13. Fill in the blanks :

Ans. (a) All sides of an **equilateral** triangle are equal.
(b) All sides of a scalene triangle are **different**.
(c) Two sides of an **isoceles** triangle are equal.
(d) One angle of an obtuse-angled triangle is **obtuse**.
(e) If one angle of triangle is right angle, the triangle is **right-angled** triangle.
(f) There are **three** sides of a triangle.
(g) All angles of a acute-angled triangle are **acute**
(h) One angle of a right-angled triangle is of **90°**.

14. Write True or false for the following statements :

Ans. (a) A triangle has two obtuse angle. **False**
(b) A triangle has only one right angle. **True**
(c) If two sides of a triangle are equal then it is equilateral triangle. **False**
(d) A triangle can have more than one acute angle. **True**
(e) All sides of a scalene triangle are different. **True**

23 Circle

Exercis - 41

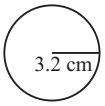
1. Name radii, diameters and chords of the given circles :

Ans. (a) Radius: OP, OD, OA, OE, OQ;
Diameter : DQ;
Chord : KC, GH
(b) Radius : OK, OE, OA, OB, OD, OL;
Diameters: AB, KE, DL
Chord: GH, PQ

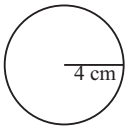
2. Draw circles of the following radii by using compass :

Ans. (a) 2.4 cm

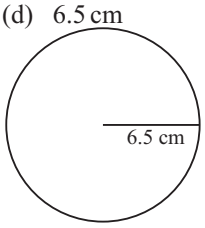
(b) 3.2 cm



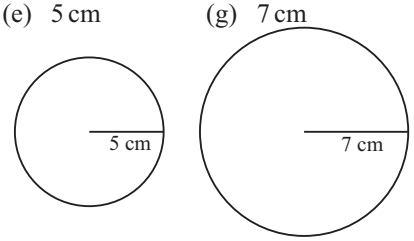
(c) 4 cm



(d) 6.5 cm

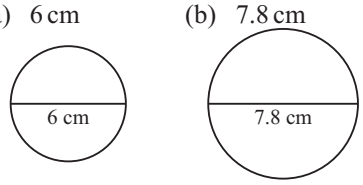


(e) 5 cm (g) 7 cm

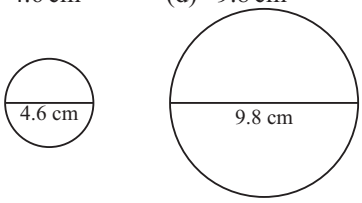


3. Draw circles of the following diameters by using compass :

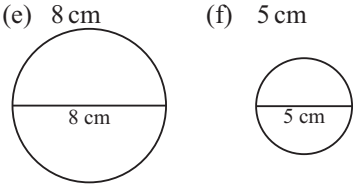
Ans. (a) 6 cm (b) 7.8 cm



(c) 4.6 cm (d) 9.8 cm



(e) 8 cm (f) 5 cm



4. Find the radii of the circles whose diameters are :

Ans. (a) 14 cm

$\because R = \frac{D}{2}$

$= \frac{14}{2}$

$= 7$ cm

(b) 20.6 cm

$\because R = \frac{D}{2}$

$= \frac{20.6}{2}$

$= 10.3$ cm

(c) 18.8 cm

$\because R = \frac{D}{2}$

$= \frac{18.8}{2}$

$= 9.4$ cm

(d) 30 cm

$\because R = \frac{D}{2}$

$= \frac{30}{2}$

$= 15$ cm

(e) 40 cm

$\because R = \frac{D}{2}$

$= \frac{40}{2}$

$= 20$ cm

(f) 80 cm

$\because R = \frac{D}{2}$

$= \frac{80}{2}$

$= 40$ cm

5. Find the diameters of the circles whose radii are :

Ans. (a) 80 cm

$\because D = R \times 2$

$= 80 \text{ cm} \times 2$

$= 160$ cm

(b) 25.6 cm

$\because D = R \times 2$

$= 25.6 \text{ cm} \times 2$

$= 51.2$ cm

(c) 42 cm

$\because D = R \times 2$

$= 42 \text{ cm} \times 2$

$= 84$ cm

(d) 30.2 cm

$\because D = R \times 2$

$= 30.2 \text{ cm} \times 2$

$= 60.4$ cm

(e) 30 cm

$\because D = R \times 2$

$= 30 \text{ cm} \times 2$

$= 60$ cm

(f) 40 cm

$\because D = R \times 2$

$= 40 \times 2$

$= 80$ cm

6. Fill in the blanks :

Ans. (a) The diameter of the circle is **longest** chord.

(b) A line-segment whose end **points** lie on the circle is called a chord.

(c) The radius is **half** of the diameter.

(d) The diameter is **double** of the radius.

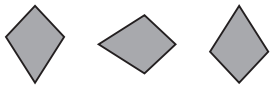
24 Symmetry

Exercise - 42

1. Rotate the given figures in clockwise direction (three steps) :

Ans. (a)

(b)



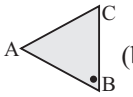
(c)

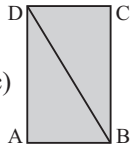
(d)

(e)

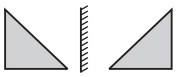
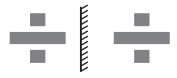
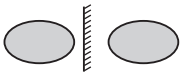
(f)

2. Rotate the given figures in anticlockwise direction :

Ans. (a) 

(b) 
(c) 

3. Draw the figure after the reflection of the following figures :

Ans. (a) 
(b) 
(c) 
(d) 
(e) 
(f) 

4. Find out which letters in the English alphabet look the same after half a turn.

Ans. I, O and X

5. Give half a turn to the numbers from 0 to 9. Find which of them still looks the same.

Ans. 0, 1, 8

6. Draw what the following shapes would look like on – turn and half a turn :

Ans.

	On $\frac{1}{4}$ turn	On half turn
(a)		 
(b)		 
(c)		 
(d)		 

25 Pictorial Representation of Data

Exercise - 43

1. The percentage distribution of educated males and females in different states :

Ans. (a) State B (b) State B (c) State C

2. The table given below shows the production of wheat and rice in India in different years. Read the table carefully and answer the following questions :

Ans. (a) In 2006,2008,2009
(b) In 2006, 2007, and 2010
(c) 2010
(d) Wheat = 1200 quintals, Rice = 800 quintals

3. The population of India in six different censuses is given by below in nearest crores :

Ans.

Year	Population
1951	
1961	
1971	
1981	
1991	
2001	

(Here one  shows 9 crores)

Exercise - 44

1. The number of eatables in a canteen is shown as a tally mark chart below. Make a frequency table for the data :

Ans.

Items	Tally Marks	Frequency
Petties	𝍸 𝍸 𝍸 |	5 + 5 + 5 + 1 = 16
Chips packets	𝍸 𝍸 ||	5 + 5 + 2 = 12
Biscuits	𝍸 𝍸	5 + 5 = 10
Cold drinks	𝍸 𝍸 ||	5 + 5 + 2 = 12
	Total	50

2. A shopkeeper makes a chart of the cold drinks he sells. Whenever he sells any particular drink he puts a vertical bar by the name of the cold drinks :

Ans.

Items	Tally Marks	Frequency
Pepsi	𝍸 𝍸 𝍸 |	5 + 5 + 5 + 1 = 16
Mirinda	𝍸 𝍸 ||	5 + 5 + 2 = 12
Maaza	𝍸 𝍸 |||	5 + 5 + 3 = 13
Limca	𝍸 𝍸 𝍸 𝍸 ||	5 + 5 + 5 + 5 + 2 = 22
Coke	𝍸 𝍸 𝍸 𝍸	5 + 5 + 5 + 5 = 20
7-up	𝍸 𝍸 |	5 + 5 + 1 = 11
Thums-up	𝍸 𝍸 |	5 + 5 + 1 = 11
	Total	105

Test Time-1

1. Write the largest number of 7digits and the smallest number of 8 digits. Find the different between them.

Ans. Largest 7 digit number = 9999999
Smallest 8 digit number = 10000000
Difference = 10000000 − 9999999 = 1

2. Find : XL–IV

Ans. XL – IV = 15 – 4 = 11 = XI

3. Write the smallest and the biggest numbers using 0, 1, 3, 5 and 7. Write down the difference between them also.

Ans. Smallest number = 10357
Biggest number = 75310
Difference = 75310 − 10357 = 64953

4. Expand the expression 5 × (6 + 7), using the distributive property of multiplication over addition.

Ans. (5 × 6) + (5 × 7)

5. Write the multiplicative property of 1.

Ans. Any number multiplied by 1 gives the same number.

6. Mahesh distributed sweets among his 5 friends. Each friend got 7 sweets and 4 sweets were left with Mahesh. Find the total number of sweets Mahesh had before the distribution.

Ans. Total sweets Mahesh had = 5 × 7 + 4
= 35 + 4 = 39 sweets

7. Fill in the blanks :

Ans. (a)

	3450
×	324
	3800
	69000
	1035000
	1117800

(b)

	615950
×	435
	3079750
	18478500
	246380000
	267938250

(c)

	618
×	325
	3090
	12360
	185400
	100750

8. Find the prime factors of the following :

Ans. (a)

2	258
3	129
43	43
	1

$\therefore$ Prime factors $= 2 \times 3 \times 43$

(b)

2	4444
2	2222
11	1111
101	101
	1

$\therefore$ Prime factors $= 2 \times 2 \times 11 \times 101$

(c)

2	1024
2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

$\therefore$ Prime factors $= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

(d)

2	2000
2	1000
2	500
2	250
5	125
5	25
5	5
	1

$\therefore$ Prime factors $= 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5$

9. Divide :

(a) $\frac{3}{7} \div 8\frac{2}{14}$

$= \frac{3}{7} \div \frac{114}{14}$

$= \frac{3}{7} \times \frac{14^{7}}{114_{38_{19}}}$

$= \frac{2}{7 \times 19}$

$= 19$

(b) $9\frac{3}{6} \div 18\frac{4}{3}$

$= \frac{57}{6} \div \frac{58}{3}$

$= \frac{57}{6} \times \frac{3}{58}$

$= \frac{57}{2 \times 58}$

$= \frac{57}{116}$

10. Change the following into per cent :

(a) 0.16

$= \frac{16}{100}$

$= 16\%$

(b) 8.14

$= \frac{814}{100}$

$= 814\%$

(c) $\frac{3}{7} = \frac{3/7}{100}$

$= \frac{3 \times 100}{7}$

$= \frac{300}{7} = 42.86\%$

(d) $4\frac{2}{5} = \frac{22}{5}$

$= \frac{22 \times 20}{5 \times 20}$

$= \frac{440}{100} = 440\%$

11. Anju sold her 10 books with loss of ₹ 60 per copy. If the selling amount was ₹ 1200, find the cost price of each book.

Ans. Selling price of 10 books $=$ ₹1200

Selling price of 1 book $= \frac{1200}{10}$

$=$ ₹120

Loss suffered on each book $=$ ₹60

$\therefore$ CP $= 8.P + \text{Loss}$

$=$ ₹120 + ₹160 $=$ ₹180

12. Write the definition of the following :

Ans. (a) **Ray:** Ray is a figure which has only one end point.

(b) **Point:** A point is a location or dot on a surface.

(c) **Radius:** The straight line segment which join centre to any point which lies on the circle is called radius of the circle.

(d) **Chord:** A line segment whose end-points lie on the circle is called a chord.

13. What is the angle sum property of a triangle?

Ans. Angle sum property of a triangle states that measure of all the three angles of a triangle is equal to 180°.

14. Add the following :

Ans. (a) 5 hours and 2 days

$= 5$ hours $+ (2 \times 24$ hours$)$

$= 5$ hours $+ 48$ hours

$= 53$ hours

(b) 5 km 60 m 3 mm and 4 mm 3 dam 6 cm

$= 5 \times 1000$ m $+ 60 + \frac{3}{1000} + \frac{3}{1000} + \frac{3}{10} + \frac{3}{100}$

$= 5000 + 60 + 0.003 + 0.004 + .0 + 0.06$

$= 5060.367$ m.

15. If 125 cm^3 is the volume of a cube. Write the exact lengths of it's side.

Ans. Volume $= 125$ cm^3

Side $= \sqrt[3]{125}$

$= \sqrt{5 \times 5 \times 5}$

$\therefore$ length $= 5$ cm

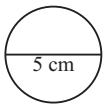
16. Write the definition of radius chord.

Ans. (a) **Radius:** The straight line segment which join centre to any point which lies on the circle is called radius of the circle.

(b) **Chord:** A line segment whose end-points lie on the circle is called a chord.

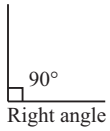
17. Draw a circle with the help of a compass where diameter of the circle is equal to 5 cm.

Ans.



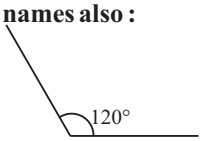
18. Draw the angles of following measures, write their names also :

Ans. (a)



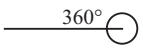
Right angle

(b)



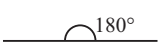
Obtuse angle

(c)



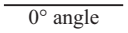
Complete angle

(d)



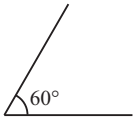
Straight angle

(e)



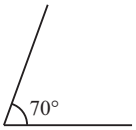
0° angle

(f)



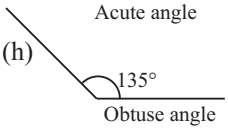
Acute angle

(g)



Acute angle

(h)



Obtuse angle

19. Measure the following angles and write their names also :

Ans. (a) 90°; Right angle

(b) 225°; Reflex angle

20. Define the following :

Ans. (a) **Complimentary Angle:** If the sum of two angles is 90°, the angles are called complementary angles.

(b) **Angle:** An angle is figure made by joining of two rays having common end point.

(c) **Triangle:** A triangle is a figure made by three line seqments joining together.

(d) **Equilateral Triangle:** A triangle in which one angle is right angle is called equilateral triangle.

Test Time-2

1. Find the average of first seven multiples of 3.

Ans. Number of quantities = 7

Sum of all numbers = 3 + 6 + 9 + 12 + 15 + 18 + 21 = 84

$$\text{Anerage} = \frac{\text{Sum of all numbers}}{\text{numbers of quantities}}$$

$$= \frac{84}{7} = 12$$

2. Find the distance covered in 20 minutes by a car travelling at 45 km/hrs.

Ans. Speed = 45 km/hr

Time = 20 min

Converting speed into m/min we get

$$\frac{\cancel{45}^{15} \times \cancel{1000}^{50}}{\cancel{60}_{2}} = 15 \times 50$$

$$= 750 \text{ m/min}$$

We know that, Distance = Speed×Time

$= 750 \times 20$

$= 15000$ metre

$= 15$ km.

3. Express 36 km/hr in metres per second.

Ans. $36 \text{ km/hr} = \frac{\cancel{36}^{1} \times 10\cancel{00}}{\cancel{3600}_{1}}$

$= 10$ metre per second

4. An Express train travels a distance of 143 km from Meerut to Kota in 1 hour 50 minutes. What is its speed?

Ans. Distance from Meerut to Kota = 143 km

Time = 1 hour 50 minutes

Converting km into metre and hours into minutes we get 143×1000 m

$= 143000$ m

and 1 hour 50 minutes

$= 60 \text{ min} + 50 \text{ min} = 110$ minutes

$$\text{We know that Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$= \frac{143000}{110}$$

$$= 1300 \text{ m/min}$$

Converting into km/hr we get

$$\frac{1300 \times 60}{1000} = 78 \text{ km/hr}$$

5. The average weight of 15 boys is 33.6 kg and average weight of another 10

boys is 32.5 kg. Find the average weight per boy.

Ans. Number of quantities = 15 + 10 = 25

Sum of all numbers

= (15 × 33.6 kg) + (10 × 32.5 kg)

= 504 kg + 325 kg = 829 kg

$$\text{Average} = \frac{\text{Sum of all numbers}}{\text{Number of quantities}}$$

$$= \frac{829}{25} = 33.16 \text{ kg}$$

6. Fill in the blanks :

Ans. (a) 4% of one kg = **4** gm.

(b) 80% = $\frac{\mathbf{4}}{\mathbf{5}}$

(c) Speed = **Distance**÷Time.

7. Which of the following is equivalent to 0.02?

Ans. (a) 2%

8. In each of the following cases, fill in the blanks with suitable word :

Ans. (a) When the selling price is less than its cost price, the seller makes a **Loss**.

(b) When the selling price is more than its cost price, the seller makes a **Profit**

(c) Selling price = cost price + **Profit**.

(d) Cost price = selling price + **Loss**.

9. In an examination a boy gets 50% marks out of the total marks 150. How many marks does the boy get?

Ans. Total marks = 150

Marks obtained by boy = 50% of 150

$= (\frac{50}{100} \times 100)$

= 75 marks.

10. Find the value of 125% of 125.

Ans. 125% of 125

$= (\frac{125}{\cancel{100}_4} \times \cancel{125}^5) = \frac{625}{4}$

= 156.25.

11. A man earned ₹ 3000 every month. He spends 65% of his earnings. How much does he spend every month?

Ans. Total income of the man = ₹ 3000

Expenditure of the man = 65 % of 3000

Total expenditure $= (\frac{65}{100} \times 3000)$

= 65 × 30

= ₹ 1950

∴ The man spends ₹1950 every month.

12. A man buys a horse. He sells it at ₹ 5670 and makes a profit of ₹ 1030. What was the cost price of the horse?

Ans. Selling price of horse = ₹5670

Profit = ₹1030

We know that

cost price = Selling price – Profit

= ₹ 5670 – ₹ 1030

= 4640

∴ The cost price of horse is ₹ 4640.

13. Ravi bought a T.V. set for ₹ 2500 and sells it at ₹ 2200. Find his loss per cent.

Ans Cost price = ₹ 2500.

Selling price = ₹ 2200

Loss suffered = ₹ 2500 – ₹ 2200

= ₹300

$$\text{Lose percent} = (\frac{\text{Loss}}{\text{CP}} \times 100)\%$$

$$= \frac{300}{2500} \times 100$$

$$= \frac{30}{25} = 1.2\%$$

14. Find the measure of the ∠ABC in each of the following given figures using properties of angles and triangles :

Ans. (a) ∠B = 180° – (∠A + ∠C)

= 180 ° – (70° + 50°)

= 180° – 120° = 60°

∴ ∠ABC = 60°

(b) Here ∠ABP = 60°

Now according to property of straight angle

∠ABC + ∠ABP

= straight angle ∠P

⇒ ABC + ∠ABP = 180°

⇒ ABC = 180° – ∠ABC

= 180° – 60°

= 120°

∴ ABC = 120°

(c) According to property of quadrilateral

Measure of all the four angles

= 360°

∠B = 360° – (∠A + ∠D + ∠C)

∠B = 360° – (75° + 120° + 80°)

= 360° – 275°

= 85°

∴ ABC = 85°

(d) $\because$ $\angle CBD = 90°$ and $\angle ABD$ is a strainght angle $= 180°$

$\therefore$ According to Angle property

$\angle ABC = \angle ABC - \angle CBD$

$= 180° - 90° = 90°$

15. A courtyard 25.5 m long 16 m broad is to be paved with bricks of length 34 cm breadth 20 cm. Find the number of bricks required.

Ans. Length of courtyard $= 25.5$m $= 25.5 \times 100$ cm

Breadth of courtyard $= 16$ m $= 16 \times 100$ cm

Area of courtyard $= (25.5 \times 100) \times (16 \times 100)$

$= 2550\text{ m} \times 1600\text{ m} = 4080000$ m

Length of brick $= 34$ cm

Breadth of brick $= 20$ cm

Area of brick $= (34 \times 20)$ cm $= 680$ cm

Number of bricks required

$= \frac{\text{Area of courtyard}}{\text{Area of brick}} = 6000$ bricks

16. Define circle.

Ans. Circle: Circle is a closed circular figure with no vertex or edge.

17. Simplify the following :

Ans. (a) $12\ [4 \div 2 + \{3 \div 1 + (1\frac{1}{3})\}]$

$= 12\ [4 \div 2 + \{3 \div 1 + (\frac{4}{3})\}]$

$= 12\ [4 \div 2 + \{3 + \frac{4}{3}\}$

$= 12[2 + \{3 + \frac{4}{3}\}] = 12[2 + \frac{13}{3}]$

$= 12\ [\frac{19}{3}] = \frac{^{4}\cancel{12} \times 19}{\cancel{3}}$

$= 4 \times 19 = 76$

(b) $4\frac{1}{2} \times 3\frac{3}{5} \times 1\frac{1}{3} + \frac{4}{6} \times 3 \times 7 \times \frac{8}{7}$

$= \frac{9}{2} \times \frac{18}{5} \times \frac{4}{3} + \frac{4}{6} \times 3 \times 7 \times \frac{8}{7}$

$= \frac{^{3}\cancel{9} \times 18 \times \cancel{4}^{2}}{\cancel{2} \times 5 \times \cancel{3}} + \frac{4 \times 3 \times 7 \times \cancel{8}^{4}}{_{2}\cancel{6} \times 7}$

$= \frac{3 \times 2}{5} + 4 \times 4 = \frac{6}{5} + \frac{16}{1}$

$= \frac{6 + 80}{5} = \frac{86}{5}$

$= 17\frac{1}{5}$

Test Time - 3

1. Write the largest and the smallest numbers of 8 digits by using, 0, 1, 2, 3, 4, 5, 6, 7.

Ans. Largest number $= 76543210$

Smallest number $= 10234567$

2. Find the L.C.M. of 144, 244, 288, 360 by long division method.

Ans.

2	144,	244,	288,	360,
2	72,	122,	144,	180
2	36,	61,	72,	90
2	18,	61,	36,	45
3	9,	61,	6,	15
3	3,	61,	6,	15
2	1,	61,	2,	5
5	1,	61,	1,	5
61	1,	1,	1,	1
	1,	1,	1,	1

$\Rightarrow$ LCM of 144, 244, 288, 360

$= 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 2 \times 5 \times 61$

$= 175680$

3. The cost of 600 bikes is ₹ 9897643254. Find the cost of one bike.

Ans. Cost of 600 bikes $=$ ₹ 9897643254.

Cost of 1 bike $= \frac{9897643254}{600}$

$= 16496072.09$

4. Find the supplement of :

Ans. (a) $180° - 80° = 100°$

(b) $180° - 112° = 68°$

5. Evaluate :

Ans. (a) $4\frac{1}{2} \div \frac{98}{108} \times 2\frac{11}{4} + 7\frac{52}{7}$

$= \frac{9}{2} \div \frac{98}{108} \times \frac{11}{4} + \frac{52}{7}$

$= \frac{9}{\cancel{2}} \times \frac{\cancel{108}^{\cancel{54}^{27}}}{\cancel{98}} \times \frac{11}{\cancel{4}} + \frac{52}{7}$

$= \frac{27 \times 9 \times 11}{98} + \frac{52}{7}$

$= \frac{2673}{98} + \frac{52 \times 14}{7 \times 14}$

$= \frac{2673 + 728}{98}$

$= \frac{3401}{98} = 34\frac{69}{98}$

(b) $1\frac{7}{9} \div \frac{16}{27} \times 5\frac{4}{9} + 9\frac{3}{8}$

$= \frac{16}{9} \div \frac{16}{27} \times \frac{49}{9} + \frac{75}{8}$

$= \frac{\cancel{16}}{\cancel{9}} \times \frac{\cancel{27}^{\cancel{3}}}{\cancel{16}} \times \frac{49}{\cancel{9}_{3}} + \frac{75}{8}$

$= \frac{49}{3} + \frac{75}{8} = \frac{49 \times 8}{3 \times 8} + \frac{75 \times 3}{8 \times 3}$

$$= \frac{392}{24} + \frac{225}{24} = \frac{620}{24}$$

$$= 25\frac{\cancel{20}^{5}}{\cancel{24}_{6}} = 25\frac{5}{6}$$

6. A man bought a cooler for ₹ 8400. If he wants a profit of 12% on it, find its selling price.

Ans. Cost price of cooler = ₹8400

Profit required = 12 % of 8400

$$= \frac{12}{100} \times 8400 = ₹1008$$

Selling price = CP + Profit

= ₹8400 + ₹1008

= ₹9408

7. The cost of 139 tables is ₹ 110580, find the cost of 1 table.

Ans. Cost price of 139 tables = ₹ 110580

$$\text{Cost price of 1 table} = \frac{₹\ 110580}{139}$$

= ₹ 795.53

8. Mukesh deposited ₹48000 in the bank for 15 months at the rate of 7.25% per annum. Find the interest and amount at the end of 15 months.

Ans. Principal = ₹4800

Time = 15 months $= 1\frac{1}{3}$ years

$= \frac{4}{3}$

Rate = 7.25%

$$\text{S.I.} = \frac{P \times R \times T}{100}$$

$$= \frac{^{16}\cancel{48000} \times 4 \times 725}{\cancel{100} \times 10\cancel{0} \times \cancel{3}}$$

$$= \frac{16 \times 4 \times 725}{10} = ₹4640$$

Amount = Principal + Interest

= ₹48000 + ₹4640

= ₹52640

9. The cost of a car was ₹ 97000 in March. It increases by 12% in April. Find the new cost of car.

Ans. Cost of car in march = ₹97000

Increase in cost = 12%

New cost = ₹ 97000 + 12% of ₹ 97000

$$= ₹\ 97000 + (\frac{12}{100} \times 97000)$$

= ₹ 97000 + ₹ 11640

= ₹ 108640

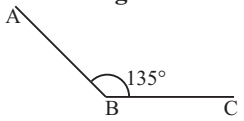
10. Find the complement of 48° and 59°.

Ans. Complement of 48° = 90° – 48° = 42°

Complement of 59° = 90° – 59° = 31°

11. Construct an angle of 135°.

Ans.



12. A room is 18 m long and 15 m broad. Find the cost of flooring the room at the rate ₹ 8 per square metre.

Ans. Length of room = 18 m

Breadth of room = 15 m

Area = C × B = 18 m × 15 m = 27059 m

Cost of flooring = 8 per 59 m

= 270 × 8 = ₹2160

13. Diksha deposited ₹ 53400 in a finance company for $4\frac{1}{2}$ years at the rate of 15.25% per annum. Calculate the amount at maturity.

Ans. Principal = ₹53400

Time $= 4\frac{1}{2}$ years $= \frac{9}{2}$ years

Rate 15.25%

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{53400^{267} \times 1525 \times 9}{100 \times 100 \times 2}$$

$$= \frac{267 \times 1525^{305^{61}} \times 9}{100_{24_{4}}}$$

$$= \frac{267 \times 61 \times 9}{4} = 36645.75$$

Amount = Principal + Interest

= ₹ 53400 + ₹ 36645.75

14. A person bought a cycle for ₹ 960 and sold it for ₹ 1075. Find profit or loss per cent.

Ans. Cost Price of cycle = ₹ 960

Selling price of cycle = ₹1075

∵ CP < SP ∴ Profit

Profit = SP – CP

= ₹ 1075 – ₹ 960 = ₹115

$$\text{Profit percent} = (\frac{\text{Profit}}{\text{CP}} \times 100)\ \%$$

$$= \frac{115}{960} \times 100$$

$$= \frac{1150}{96} = 11.98\%$$

15. A cuboid measures 32 cm by 24 cm by 16 cm. How many cubes of edges 4 cm can be cut from it.

Ans. Volume of Cuboid = 32 × 24 × 16

= 12288 cm^3

Volume of cube = 4 × 4 × 4 = 64 cm^3

$$\text{Number of cubes} = \frac{12288}{64}$$

= 192 cubes.