Class VIII Session 2024-25
Subject - Mathematics
Sample Question Paper - 10

Time Allowed: 3 hours **Maximum Marks: 80**

General Instructions:

1. This Question Paper has 4 Sections A-D.
2. Section A has 20 MCQs carrying 1 mark each.
3. Section B has 6 questions carrying 02 marks each.
4. Section C has 8 questions carrying 03 marks each.
5. Section D has 6 questions carrying 04 marks each.
6. All Questions are compulsory.
7. Draw neat figures wherever required. Take π =22/7 wherever required if not stated

Section A

1. An irrational number is **[1]**

   a) a terminating and non-repeating decimal
   b) a terminating and repeating decimal
   c) a non-term inating and non-repeating decimal
   d) a non-terminating and repeating decimal

2. Find $\frac{5}{9} + \left(-\frac{5}{18}\right) + \left(-\frac{7}{18}\right) + \frac{7}{9}$ **[1]**

   a) $\frac{2}{3}$
   b) $\frac{3}{2}$
   c) -3
   d) -2

3. Solve for y : $\frac{1}{2}(3y + 1) - \frac{1}{3}(5y + 2) = y - 1$ **[1]**

   a) 75
   b) $\frac{7}{5}$
   c) $\frac{-5}{7}$
   d) $\frac{5}{7}$

4. The solution for $\frac{2}{x+3} - \frac{4}{x-3} = \frac{-6}{x+3}$ is: **[1]**

   a) -1
   b) -3
   c) 3
   d) 9

5. ABCD is a quadrilateral in which AB = 5 cm, CD = 8 cm and the sum of angle A and angle D is 180^o. What is the name of this quadrilateral? **[1]**

   a) Parallelogram
   b) Can not be determined
   c) Rhombus
   d) Trapezium

6. The paper is a model for a _____. **[1]**

   a) Point
   b) Circle

c) Border

d) Plane surface

7. The smallest number by which 3888 must be divided so that the resulting number is a perfect square is **[1]**

a) 2

b) 4

c) 3

d) 6

8. 1681 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows. **[1]**

a) 43

b) 47

c) 49

d) 41

9. Find the smallest number by which 2560 must be multiplied so that the product will be a perfect cube. **[1]**

a) 10

b) 25

c) 15

d) 20

10. Which one of the following will have cube root ending with 3? **[1]**

a) 39304

b) 50653

c) 35937

d) 46656

11. A sum of money doubles itself at compound interest in 15 yr. In how many years will it become eight times? **[1]**

a) 20 yr

b) 40 yr

c) 35 yr

d) 45 yr

12. Ratio of 250 ml to 2 L is **[1]**

a) 25 : 200

b) 1 : 8

c) 8 : 1

d) 2 : 1

13. $5x \times 4x^2$ =? **[1]**

a) $20x^3$

b) $20x^2$

c) 20x

d) 20

14. If 1 cap costs ₹ $(x^2 + 4x - 21)$, then what is the cost of (x + 5) caps? **[1]**

a) ₹ $(x^3 + 9x^2 - x - 105)$

b) ₹ (x + 5)

c) ₹ $(x^3 - 9x^2 + x - 100)$

d) ₹ (x - 7)

15. Side of a square garden is 30 m. If the scale used to draw its picture is 1 cm : 5 m, the perimeter of the square in the picture is **[1]**

a) 30 cm

b) 24 cm

c) 20 cm

d) 28 cm

16. A cylindrical tank has a capacity volume 6160 cm^3. If its radius is 14 cm, then its depth (in cm) is **[1]**

a) 5

b) 50

c) 15

d) 10

17. If x be any integer different from zero and m, n be any integers, then $(x^m)^n$ is equal to **[1]**

a) $x^{(m-n)}$

b) x^{mn}

c) $x^{(m+n)}$

d) $\frac{m}{x^n}$

18. Seema weaves 25 baskets in 35 days. In how many days will she weave 110 baskets? **[1]**

a) 144

b) 154

c) 140

d) 150

19. The fractorisation of 1 + p + q + r + pq + qr + pr + pqr is **[1]**

a) (1 + p)(1 + q)(1 - r)

b) (1 - p)(1 - q)(1 + r)

c) (1 - p)(1 - q)(1 - r)

d) (1 + p)(1 + q)(1 + r)

20. Factors for $a^2b^2 + c^2d^2 - a^2c^2 - b^2d^2$ are: **[1]**

a) $(a^2 - b^2)$

b) $(a^2 - b^2)(b^2 - c^2)$

c) (a + d) (a - d)(b + c)(b - c)

d) $(a^2 + b^2)$

Section B

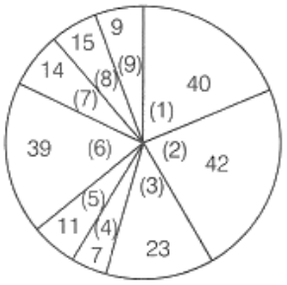
21. Solve the equation and check your result: 5t – 3 = 3t – 5 **[2]**

22. Two sticks each of length 5 cm are crossing each other such that they bisect each other. What shape is formed by joining their endpoints? Give reason. **[2]**

23. Following is a pie chart showing the amount spent (in ₹ thousands) by a company on various modes of advertising for a product. Now, answer the following questions: **[2]**

a. Which type of media advertising is of the greatest amount of total?

b. Which type of media advertising is of the least amount of total?



The numbers 1-9 in the pie-chart represent:

1. Television
2. Newspaper
3. Magazines
4. Radio
5. Business papers
6. Direct mail
7. Yellow page
8. Outdoor
9. Miscellaneous

24. Is 392 a perfect cube? If not, find the smallest natural number by which 392 must be multiplied so that the product is a perfect cube. **[2]**

OR

Find out if 6859 is a perfect cube?

25. Multiply : (x - y) and (3x + 5y) **[2]**

26. In a town, an ice-cream parlour has displayed an ice-cream sculpture of height 360 cm. The parlour claims that these ice-creams and the sculpture are in the scale 1:30. What is the height of the ice-creams served? **[2]**

OR

The distance between City A and City B on a map is given as 6 cm. If the scale represents 1 cm = 200 km, then find the actual distance between City A and City B.

Section C

27. The cost of 2⅓ meters of cloth is ₹ 75¼. Find the cost of cloth per meter. **[3]**

OR

Find $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \left(\frac{5}{22}\right)$

28. Solve: $\frac{3t+5}{4} - 1 = \frac{4t-3}{5}$ **[3]**

29. Find the value of $\sqrt{\sqrt{144} + \sqrt{25}}$ **[3]**

30. A sum ₹10,000 is borrowed at a rate of interest 15% per annum for 2 years. Find the simple interest on this sum and the amount to be paid at the end of 2 years. **[3]**

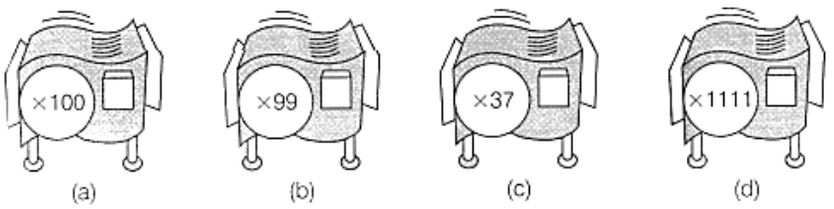
OR

An article was purchased for ₹1239 including GST of 18%. Find the price of the article before GST was added.

31. Find the volume of rectangular box with sides are $4p^2q^3$, 3pq and $2p^2q$. **[3]**

32. Rani bought a syrup in a glass bottle. The shape of the bottle is cylindrical with diameter 6cm and height 15cm. Find the volume of the bottle? **[3]**

33. If possible, find a hook-up of prime base number machine that will do the same work as the given stretching machine. Do not use ($\times$ 1) machines. **[3]**



34. Factorise: $p^4 - 81$ **[3]**

Section D

35. Find the measure of an exterior angle of a regular pentagon and an exterior angle of a regular decagon. What is the ratio between these two angles? **[4]**

36. On a particular day, the sales (in rupees) of different items of a baker's shop are given below. **[4]**

ordinary bread	320
fruit bread	80
cakes and pastries	160
biscuits	120
others	40
Total	720

Draw a pie chart for this data

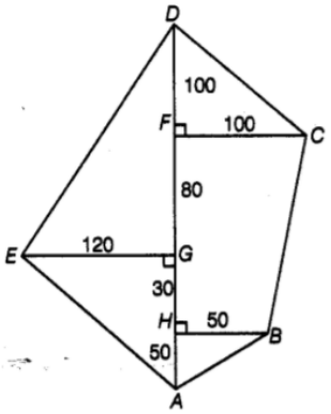
OR

The table shows the colour preferred by a group of people. Draw a pie chart showing the following information:

Colour	Blue	Green	Red	Yellow	Total
Number of people	**18**	**9**	**6**	**3**	**36**

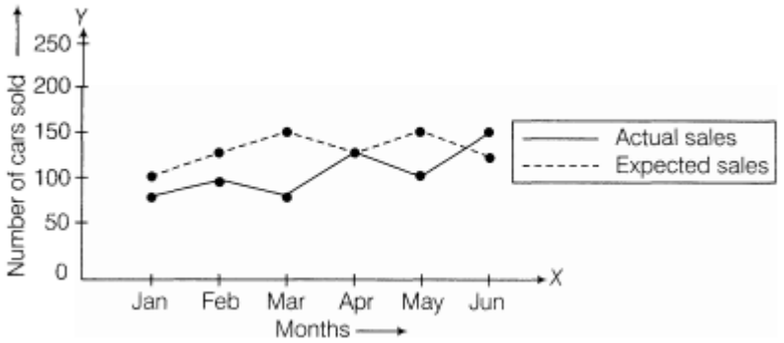
37. Calculate the amount and compound interest on ₹ 18,000 for $2\frac{1}{2}$ years at 10% per annum compounded annually. **[4]**

38. Find the area of the following fields. All dimensions are in metres: **[4]**



39. A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how for can it travels in 5 hours ? **[4]**

40. The graph given below gives the actual and expected sales of cars of a company for 6 months. Study the graph and answer the questions that follow: **[4]**



a. In which month were the actual sales the same as the expected sales?

b. For which month(s) was (were) the difference in actual and expected sales the maximum?

c. For which month(s) was (were) the difference in actual and expected sales the least?

d. What was the total sales of cars in the months-January, February and March?

e. What is the average sales of cars in the last three months?

f. Find the ratio of sales in the first three months to the last three months.

Solution

Section A

1.

(c) a non-term inating and non-repeating decimal

Explanation: An irrational number is a non-terminating and nonrepeating decimal.

2. **(a)** $\frac{2}{3}$

Explanation: $[\frac{5}{9} + (\frac{-5}{18})] + [(\frac{-7}{18}) + \frac{7}{9}]$

$= [\frac{5\times2+(-5)\times1}{18}] + [\frac{-7\times1+2\times7}{18}]$

$= [\frac{10-5}{18}] + [\frac{-7+14}{18}]$

$= \frac{5}{18} + \frac{7}{18}$

$= \frac{12}{18}$

$= \frac{2}{3}$

3.

(d) $\frac{5}{7}$

Explanation: Given equation is

$\frac{1}{2}(3y + 1) - \frac{-1}{3}(5y + 2) = y - 1$

To remove fractions, we multiply the equation on both sides by LCM of 2 & 3 i.e

$6[\frac{1}{2}(3y + 1) - \frac{-1}{3}(5y + 2) = 6 (y - 1)$

$\Rightarrow 3(3y + 1) - 2(5y + 2) = 6y - 6$

$\Rightarrow 9y + 3 - 10y - 4 = 6y - 6$

$\Rightarrow 9y - 10y - 6y = -6 + 4 - 3$

$\Rightarrow -7y = -5$

$\Rightarrow y = \frac{5}{7}$

4.

(d) 9

Explanation: $\frac{2}{x+3} - \frac{4}{x-3} = \frac{-6}{x+3}$

$\Rightarrow \frac{2(x-3)-4(x+3)}{(x+3)(x-3)} = \frac{-6}{x+3}$

$\Rightarrow \frac{2x-6-4x-12}{(x+3)(x-3)} = \frac{-6}{(x+3)}$

$\Rightarrow \frac{-2x-18}{x-3} = -6$

$\Rightarrow -2x - 18 = -6x + 18$

$\Rightarrow 4x = 36 \Rightarrow x = 9.$

5.

(d) Trapezium

Explanation: We have given that $\angle A + \angle D = 180$

Therefore, quadrilateral must be a Trapezium

6.

(d) Plane surface

Explanation: A paper is a model of a plane surface with no 3-d (three - dimensional) shape.

7.

(c) 3

Explanation: Resolving 3888 into its prime factors, we find that

$3888 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3$

$3888 = (2 \times 2) \times (2 \times 2) \times (3 \times 3) \times (3 \times 3) \times 3$

2	3888
2	1944
2	972
2	486
3	243
3	81
3	27
3	9
3	3
	1

Here we find that prime factor 3 is appearing alone.

So, if we divide 3888 by 3, we will get a perfect square number

$\frac{3888}{3} = (2 \times 2) \times (2 \times 2) \times (3 \times 3) \times (3 \times 3)$

$\therefore 1296 = (2 \times 2) \times (2 \times 2) \times (3 \times 3) \times (3 \times 3)$

$\therefore \sqrt{1296} = 2 \times 2 \times 3 \times 3 = 36$

8.

(d) 41

Explanation: Total number of plants = 1681

$\Rightarrow$ Number of rows $\times$ Number of columns = 1681

(Since, number of rows=number of columns)

$(\text{number of rows})^2 = 1681$

Number of rows = $\sqrt{1681}$

Number of rows = 41

9.

(b) 25

Explanation: $2560 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5$

There are only one 5 so if we multiply the number by 25 then it becomes a perfect square.

10.

(c) 35937

Explanation: Given, Unit digit of cube of number = 3

Unit digit of number = unit digit of $(3 \times 3 \times 3)$

= unit digit of 27

= 7

Hence, unit digit 3 will be cube root of 35937.

11.

(d) 45 yr

Explanation: $P\left(1 + \frac{R}{100}\right)^{15} = 2P$

or $\left(1 + \frac{R}{100}\right)^{15} = 2$

Now, $P\left(1 + \frac{R}{100}\right)^{n} = 8P$

$\Rightarrow \left(1 + \frac{R}{100}\right)^{n} = 8 = (2)^3 = \left\{\left(1 + \frac{R}{100}\right)^{15}\right\}^3$ [from Eq. (i)]

$\Rightarrow \left(1 + \frac{R}{100}\right)^{n} = \left(1 + \frac{R}{100}\right)^{45}$

$\Rightarrow$ n = 45

12.

(b) 1 : 8

Explanation: 250 ml : 2L = 2000 ml

250 : 2000 = 1 : 8

13. **(a)** $20x^3$

Explanation: $5x \times 4x^2$

Multiply constants and variables we get,

$5 \times 4 \times x \times x^2$

$20 \times x^2$

$20x^3$

14. **(a)** ₹ $(x^3 + 9x^2 - x - 105)$

Explanation: Cost of 1 cap is ₹ $(x^2 + 4x - 21)$

$\therefore$ Cost of $(x + 5)$ caps = $(x^2 + 4x - 21)(x + 5)$

$= x(x^2 + 4x - 21) + 5(x^2 + 4x - 21)$

$= x^3 + 4x^2 - 21x + 5x^2 + 20x - 105$

= ₹ $(x^3 + 9x^2 - x - 105)$

15. **(b)** 24 cm

Explanation: Given, side of a square garden = 30m

$\because$ Perimeter of a square = 4 $\times$ Side

$\therefore$ Perimeter of a square garden = $4 \times 30 = 120$m

Scale used to draw its picture = 1cm : 5m

Hence, the perimeter of the square in the picture = $\frac{120}{5}$ = 24 cm

16. **(d)** 10

Explanation: Let the depth of cylindrical tank be h cm.

Radius of tank, r = 14 cm.

$\therefore$ Capacity of cylindrical tank = $\pi r^2 h$

$\Rightarrow 6160 = \frac{22}{7} \times 14 \times 14 \times h$

$\Rightarrow h = \frac{6160 \times 7}{22 \times 14 \times 14}$

$\therefore$ h = 10 cm

17. **(b)** x^{mn}

Explanation: Using law of exponents, $(a^m)^n = (a)^{m \times n}$ [$\because$ a is non-zero integer]

Similarly, $(x^m)^n = (x)^{m \times n} = (x)^{mn}$

18. **(b)** 154

Explanation: Let the number of days be x.

Number of baskets	25	110
Number of days	32	1

As the weaving of more baskets will require more days.

So, it is case of direct variation.

$\Rightarrow \frac{25}{100} = \frac{35}{x} \Rightarrow 25 \times x = 100 \times 35$

$\Rightarrow x = \frac{110 \times 35}{25}$ = 154 days

19. **(d)** $(1 + p)(1 + q)(1 + r)$

Explanation: $1 + p + q + r + pq + qr + pr + pqr$

$= 1 + p + q + pq + r(1 + p + q + pq)$

$= (1 + r)(1 + p + q + pq)$

= (1 + r) [(1 + p) + q(1 + q)]
= (1 + r)(1 + p)(1 + q)

20.

(c) (a + d) (a - d)(b + c)(b - c)

Explanation: $a^2b^2 + c^2d^2 - a^2c^2 - b^2d^2$

$= a^2b^2 - a^2c^2 - b^2d^2 + c^2d^2$

$= a^2(b^2 - c^2) - d^2 (b^2 - c^2)$

$= (a^2 - d^2) (b^2 - c^2)$

= (a + d) (a - d) (b + c) (b - c)

Section B

21. 5t – 3 = 3t – 5

5t – 3t = -5 + 3 ... [Transposing 3t to L.H.S and –3 to R.H.S]

2t = –2

$\therefore t = -\frac{2}{2}$ ... [Dividing both sides by 2]

∴ t = –1

this is the required solution.

22. Sticks can be taken as the diagonals of a quadrilateral. Now, since they are bisecting each other, therefore the shape formed by joining their end points will be a parallelogram. Hence, it may be a rectangle or a square depending on the angle between the sticks.

23. From the information given, it is clear that

a. The greatest amount of the total is spent in the advertisement of the newspaper, i.e. ₹42 thousands.

b. The least amount of the total is spent in the advertisement of radio, i.e. ₹7 thousands.

24. 392 = 2 × 2 × 2 × 7 × 7

The prime factor 7 does not appear in a group of three. Therefore, 392 is not a perfect cube. To make its a cube, we need one more 7. In that case 392 × 7 = 2 × 2 × 2 × 7 × 7 × 7 = 2744 which is a perfect cube.

Hence the smallest natural number by which 392 should be multiplied to make a perfect cube is 7.

OR

19	6859
19	361
19	19
	1

By prime factorisation,

6859 = 19 × 19 × 19 [grouping the factors in triplets]

$= 19^3$ which is a perfect cube.

Therefore, 6859 is a perfect cube.

25. $(x-y) \times (3x + 5y) = x \times (3x + 5y) - y \times (3x + 5y)$

$= (x \times 3x) + (x \times 5y) - (y \times 3x) - (y \times 5y)$

$= 3x^2 + 5xy - 3yx - 5y^2 = 3x^2 + 2xy - 5y^2$

26. Given, height of ice-cream sculpture = 360 cm

Scale used for ice-cream and sculpture = 1:30

The height of the ice-creams served = Scale × Actual size $\left[\because \text{ scale } = \frac{\text{size drawn}}{\text{actual size}}\right] = \frac{1 \times 360}{30}$ = 12 cm

Hence, the height of the ice-cream served is 12 cm.

OR

We have, Actual distance represented by 1cm = 200 km

Actual distance represented by 6 cm = 6 × 200 km

= 1200 km

So, the actual distance between City A and City B = 1200 km

Section C

27. Let the cost of cloth per meter be x.

According to question

2⅓x = 75¼

$\frac{7}{3}x = \frac{301}{4}$

$x = \frac{(3\times301)}{(7\times4)}$

= ₹ 32.55

OR

We have, $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \left(\frac{5}{22}\right)$

$= \frac{198}{462} + \left(\frac{-252}{462}\right) + \left(\frac{-176}{462}\right) + \left(\frac{105}{462}\right)$ [∵ 462 is the LCM of 7, 11, 21 and 22]

$= \frac{198-252-176+105}{462}$

$= \frac{-125}{462}$

Alternatively: We can also solve it as.

$\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \frac{5}{22}$

$= \left[\frac{3}{7} + \left(\frac{-8}{21}\right)\right] + \left[\frac{-6}{11} + \frac{5}{22}\right]$

$= \left[\frac{9+(-8)}{21}\right] + \left[\frac{-12+5}{22}\right]$ [∵LCM of 7 and 21 is 21; LCM of 11 and 22 is 22]

$= \frac{1}{21} + \left(\frac{-7}{22}\right)$

$= \frac{22-147}{462}$

$= \frac{-125}{462}$

28. Given, $\frac{3t+5}{4} - 1 = \frac{4t-3}{5}$

$\Rightarrow \quad \frac{3t+5-4}{4} = \frac{4t-3}{5}$

$\Rightarrow$ 5(3t + 5 - 4)= 4(4t - 3) [by cross-multiplication]

$\Rightarrow$ 5(3t + 1) = 4 (4t-3)

$\Rightarrow$ 15t+ 5 = 16t -12

$\Rightarrow$ 15t -16t = - 12 - 5 [transposing 16t to LHS and 5 to RHS]

$\Rightarrow$ - t = -17

$\Rightarrow \quad \frac{-t}{-1} = \frac{-17}{-1}$ [dividing both sides by -1]

$\therefore \quad t = 17$

29. $\sqrt{\sqrt{144} + \sqrt{25}}$

$= \sqrt{\sqrt{3\times3\times4\times4} + \sqrt{5\times5}}$

$\sqrt{3\times4+5}$

$\sqrt{17}$

30. We have,

Rate of interest = 15% per annum

Time = 2 years

Principal = ₹10,000

Simple interest = $\frac{10000\times15\times2}{100}$

= ₹ 3000

Amount to be paid at the end of 2 years = Principal + Simple Interest

= ₹10000 + ₹3000

= ₹13000

OR

Given,

GST = 18%

Cost with GST included = ₹ 1239

Let cost without GST = x

So, Cost before GST + GST = Cost with GST

x + $(\frac{18}{100} \times x)$ = 1239

x + $(\frac{9x}{50})$ = 1239

x = 1050

Thus, price before GST = 1050 rupees

31. Volume of rectangular box = l × b × h

= $(4p^2q^3) \times (3pq) \times (2p^2q)$

= $(4 \times 3 \times 2)\ (p^2q^3 \times pq \times p^2q)$

= $24\ p^5q^5$

32. Radius of the cylindrical bottle $= \frac{diameter\ of\ the\ bottle}{2}$

$= \frac{6}{2} = 3cm$

Height of the bottle = 15 cm

We know that volume of a cylinder = area of the base × height

So volume of the bottle $= \pi r^2 \times$ h

= $3.14 \times 3 \times 3 \times 15 = 423.9\ cm^3$

Approximate volume of the bottle = $424\ cm^3$

33. a. Single machine work = 100

Hook-up machine of prime base number that do the same work down by × 100

= $2^2 \times 5^2$

= 4×25

= 100

b. ×99 = $3^2 \times 11$ hook-up machine.

c. ×37 machine cannot do the same work.

d. ×1111 = 101×11 hook-up machine.

34. $p^4 - 81$

= $(p^2)^2 - (9)^2$

= $(p^2 - 9)\ (p^2 + 9)$ . . . . [Using Identity III

= $\{(p)^2 - (3)^2\}\ (p^2 + 9)$

= $(p - 3)\ (p + 3)\ (p^2 + 9)$. . . . [Using Identity III

Section D

35. We know that, number of sides in pentagon is 5 and in decagon is 10.

Now, exterior angle of a regular pentagon = $360^o/5 = 72^o$

Exterior angle of a regular decagon = $360^o/10 = 36^o$

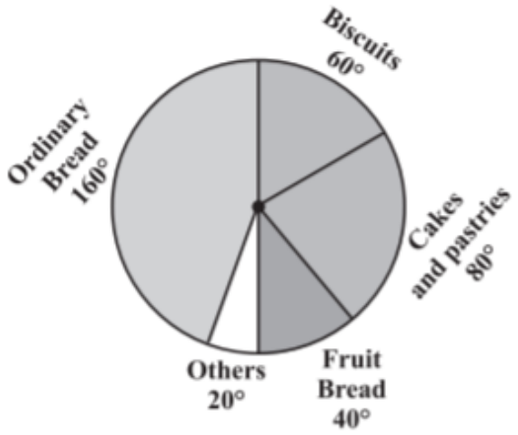
∴ Required ratio = 72/36 = 2: 1

So, the ratio between these two angles is 2:1.

36. We find the central angle of each sector. Here the total sale = ₹720. We thus have this table.

Item	**Sales (in ₹)**	**In Fraction**	**Central Angle**
ordinary bread	320	$\frac{320}{720} = \frac{4}{9}$	$\frac{4}{9} \times 360^\circ = 160^\circ$
fruit bread	80	$\frac{120}{720} = \frac{1}{6}$	$\frac{1}{6} \times 360^\circ = 60^\circ$
cakes and pastries	160	$\frac{160}{720} = \frac{2}{9}$	$\frac{2}{9} \times 360^\circ = 80^\circ$
biscuits	120	$\frac{80}{720} = \frac{1}{9}$	$\frac{1}{9} \times 360^\circ = 40^\circ$
others	40	$\frac{40}{720} = \frac{1}{18}$	$\frac{1}{18} \times 360^\circ = 20^\circ$

Now, we make the pie chart (fig)



OR

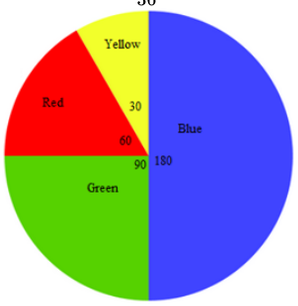
18 + 9 + 6 + 3 = 36

$\therefore$ Blue $= \frac{18}{36} \times 360 = 180^\circ$

$\therefore$ Green $= \frac{9}{36} \times 360 = 90^\circ$

$\therefore$ Red $= \frac{6}{36} \times 360 = 60^\circ$

$\therefore$ Yellow $= \frac{3}{36} \times 360 = 30^\circ$



37. By using year by year calculation

S.I. on ₹ 18000 at 10% per annum for 1 year

$= \frac{18000 \times 10 \times 1}{100} =$ ₹1800

$\therefore$ Amount at the end of 1st year

= ₹ 18000 + ₹ 1800

= ₹ 19800

= Principle for 2nd year.

S.I. on ₹ 19800 at 10% per annum for 1 year

$= \frac{19800 \times 10 \times 1}{100}$

= ₹ 1980

$\therefore$ Amount at the end of 2nd year

= ₹ 19800 + ₹ 1980

= ₹ 21780

= Principle for 3rd year

S.I. on ₹ 21780 at 10% per annum for $\frac{1}{2}$ year

$= \frac{21780 \times 10 \times 1}{2 \times 100}$

= ₹ 1089

$\therefore$ Amount at the end of $2\frac{1}{2}$ years

= ₹ 21780 + ₹ 1089

= ₹ 22869

this is the required amount.

Now,

C.I. = ₹ 22869 – ₹ 18000

= ₹ 4869.

38. Area of the given figure = Area of ΔDCF + Area of ΔEGD + Area of trapezium FCBH + Area of ΔEGA + Area of ΔAHB

Now, Area of ΔDCF = $\frac{1}{2} \times$ Base $\times$ Height

$= \frac{1}{2} \times 100 \times 100$

$= \frac{10000}{2}$

$= 5000 m^2$

Now, Area of $\Delta EGD = \frac{1}{2} \times$ Base $\times$ Height

$= \frac{1}{2} \times 120 \times 180$

$= 60 \times 180$

$= 10800 m^2$

Area of trapezium $= \frac{1}{2} \times$ (Sum of parallel sides) $\times$ Height

$= \frac{1}{2} \times (100 + 50) \times 110$

$= \frac{1}{2} \times 150 \times 110$

$= 75 \times 110 = 8250 m^2$

$\therefore$ Area of $\Delta EGA = \frac{1}{2} \times$ Base $\times$ Height

$= \frac{1}{2} \times 120 \times 80$

$= 60 \times 80$

$= 4800 m^2$

Now, Area of $\Delta AHB = \frac{1}{2} \times$ Base $\times$ Height

$= \frac{1}{2} \times 50 \times 50$

$= 25 \times 50$

$= 1250 m^2$

Therefore, the area of the complete figure = 5000 + 10800 + 8250 + 4800 + 1250

$= 30100 m^2$

39. Two quantities x and y which vary in direct proportion have the relation

x = ky or $\frac{x}{y} = k$

Here, $k = \frac{number\ of\ km\ it\ can\ travel}{time\ in\ hours}$

$= \frac{14}{\left(\frac{25}{60}\right)} = \frac{14 \times 60}{25}$

$= \frac{168}{5}$

Now, x is the distance travelled in 5 hours

Using the relation x = ky, we obtain

$x = \frac{168}{5} \times 5$

x = 168

Hence, it can tavel 168 km.

40. After observing the graph carefully, it is clear that

a. In April, the actual sales were the same as the expected sales.

b. In March, the difference in actual and expected sales was the maximum.

c. In April, the difference in actual and expected sales was the least.

d. The total sales of cars in the months January, February and March was (75+ 100+ 75) i.e. 250.

e. The average sales of cars in the last three months is 125 i.e. $\frac{125+100+150}{3}$ = 125

f. The number of sales of cars in the first three months = 250 and the number of sales of cars in the last three months = 375, Therefore the required ratio is 250: 375 i.e. 2 : 3.