

GREENLAWNS SCHOOL, WORLI
Terminal Examination 2025-26
Mathematics

STD: VIII
Date: 18/09/2025

Marks: 80
Time: 2½ min

Section A
(Attempt all Questions)

Question 1 Choose the correct answers to the questions from the given options.
(Do not copy the question, write the correct answers only.)

[15]

I. The product of two rational numbers is $^{-17/21}$. If one of the numbers be $9/7$, then find the other number.

a) $^{-27/17}$

b) $^{27/7}$

c) $^{-17/9}$

d) $^{-17/27}$

II. Multiplicative inverse of a negative rational number is _____.

a) 0

b) A positive rational number

c) 1

d) A negative rational number

III. Which of following is same as $(^{-5/6})^{-3}$?

a) $(^{-6/5})^{-3}$

b) $(^{-6/5})^3$

c) $-(^{5/6})^3$

d) $(^{5/6})^3$

IV. On dividing 11^5 by _____, we get 11. Fill in the blanks by choosing correct option.

a) 11^4

b) 11^3

c) 11^0

d) None of these

V. By what least number should 126 be divided, so that quotient is a perfect square?

a) 14

b) 13

c) 81

d) 9

VI. Evaluate $\sqrt[3]{8} + \sqrt[3]{0.027} + \sqrt[3]{0.064}$

a) 2.7

b) 3.6

c) 2.5

d) 2.04

VII. Write the cube of first three multiples of 2.

a) 8, 64, 216

b) 2, 6, 8

c) 2, 4, 6

d) 4, 36, 64

VIII. Find the discount and the selling price, when the marked price is Rs. 650, and discount is 11%.

a) Rs. 578.50

b) Rs. 576.50

c) Rs. 579.35

d) Rs. 457.50

IX. If P any set, then $P \cap \phi$ is _____?

a) P

b) ϕ

c) U

d) None of these

X. How many diagonals are there in a pentagon?

a) 4

b) 5

c) 6

d) 7

- XI.** What is the sum of all exterior angles of a regular pentagon?
a) 130° **b)** 540° **c)** 450° **d)** 360°
- XII.** If a coin is flipped in the air, what is the probability of getting a tail?
a) 0 **b)** $\frac{1}{2}$ **c)** 1 **d)** 2
- XIII.** A bag has 4 red balls and 4 green balls, what is the probability of getting a red ball randomly?
a) $\frac{1}{4}$ **b)** $\frac{1}{8}$ **c)** $\frac{1}{2}$ **d)** 0
- XIV.** When one quantity is increased, the other quantity is also increased. This proportion is called _____
(a) No proportion **(b)** Direct proportion
(c) Inverse proportion **(d)** None of these
- XV.** In grouped data, each of the groups is called:
(a) Class interval **(b)** Collection of data
(c) Frequency **(d)** Grouped frequency distribution

Question 2

- | | | |
|-------|--|-----|
| (a) | Find the number of sides of a regular polygon whose exterior angle is 24° | [2] |
| (b) | If a labourer earns ₹672 per week, how much will he earn in 18 days? | [2] |
| (c) | What percent is 300 g of 2 kg | [2] |
| (d) | Find the cube root of 21952 by prime factorization: | [2] |
| (e) | Find the smallest natural number by which 1008 should be multiplied to make it a perfect square. | [2] |
| (f) | Simplify: $[(5)^2 - (1/4)^{-2}] \times (3/4)^{-2}$ | [2] |
| (g) | If $n(A - B) = 12$, $n(B - A) = 16$ and $n(A \cap B) = 5$, find: | |
| (i) | $n(A)$ | |
| (ii) | $n(B)$ | |
| (iii) | $n(A \cup B)$ | [3] |

Question 3

- (a) Find the number of sides in a polygon if the sum of its interior angles is 1260° [2]
- (b) If 13.25 % of a number is 159, find the number. [2]
- (c) Find the discount and the discount percentage, when marked price = ₹ 780 and selling price = ₹ 721.50 [2]
- (d) If $\xi = \{1, 2, 3, \dots, 9\}$, $A = \{1, 2, 3, 4, 6, 7, 8\}$ and $B = \{4, 6, 8\}$, then find.
(i) A' (ii) $(A \cap B)'$ [2]
- (e) Write the ones digit of the cube of each of the following numbers:
(i) 358 (ii) 987 [2]

Section B
(Attempt any Four questions)

Question 4

- (a) If the angles of a pentagon are in the ratio 7 : 8 : 11 : 13 : 15, find the angles. [3]
- (b) A fort is provided with food for 80 soldiers to last for 60 days. Find how long would the food last if 20 additional soldiers join after 15 days. [3]
- (c) The list price of an article is ₹ 800 and a dealer is selling it at a discount of 20 %. Find:
(i) the selling price of the article.
(ii) the cost price of the article if he makes 25% profit on selling it. [4]

Question 5

- (a) The ratio between an exterior angle and the interior angle of a regular polygon is 1: 5. Find
(i) the measure of each exterior angle
(ii) the measure of each interior angle
(iii) the number of sides in the polygon. [3]
- (b) Find the least number which must be added to 1750 make it a perfect square. Also, find the square root of the perfect square number so obtained: [3]
- (c) If $P = \{x : x \in W \text{ and } x < 6\}$ and $Q = \{x : x \in N \text{ and } 4 \leq x \leq 9\}$, find
(i) $P \cup Q$
(ii) $P \cap Q$
(iii) $P - Q$
(iv) Is $P \cup Q$ a proper superset of $P \cap Q$? [4]

Question 6

- (a) One tap fills a tank in 20 minutes, and another tap fills it in 12 minutes. The tank being empty and if both taps are opened together, in how many minutes the tank will be full? [3]
- (b) Calculate the amount and the compound interest on Rs 5000 in 2 years when the rate of interest for successive years is 6% and 8% respectively. [3]
- (c) In a straight contest, the loser polled 42% votes and lost by 14400 votes. Find the total number of votes polled. If the total number of eligible voters was 1 lakh, find what percentage of voters did not vote. [4]

Question 7

- (a) Calculate the compound interest on Rs 6000 at 10% per annum for two years. [3]
- (b) A man invests Rs 46875 at 4% per annum compound interest for 3 years.
Calculate:
(i) Interest for the first year
(ii) Amount standing to his credit at the end of second year
(iii) Interest for the third year [3]
- (c) Find the profit or loss percentage, when:
(i) C.P. = ₹ 400, S.P. = ₹ 468
(ii) C.P. = ₹ 13600, S.P. = ₹ 12104 [4]

Question 8

- a. The number of goals scored by a football team in different matches is given below:
3, 1, 0, 0, 0, 1, 1, 2, 2, 3, 1, 2, 0, 1, 0, 2, 3, 2, 0, 1, 0, 1, 1, 0, 2, 1, 2, 2, 3, 1, 0, 0,
0, 1, 1, 0, 2, 3, 0, 1, 2, 0
Make a frequency distribution table using tally marks [3]

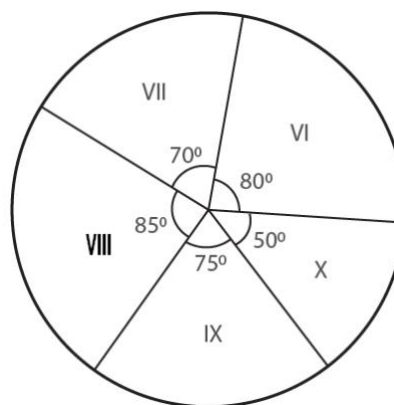
- b. A box contains 17 cards numbered 1, 2, 3,, 17 and are mixed thoroughly.
A card is drawn at random from the box. Find the probability that the number
on that card is
(i) odd
(ii) prime [2]

- c. A die is rolled once. Find the probability of getting
(i) a multiple of 3
(ii) not a multiple of 3 [2]

- d. The adjoining pie chart shows the number of students enrolled in Class VI to Class X of a school.

If 1440 students are enrolled from VI to X, then answer the following questions:

- (i) How many students are enrolled in Class VIII?
(ii) How many students are more in Class IX than in Class X?
(iii) What is the sum of students enrolled in VII and VIII? [3]



Answer key

Section A (Attempt all Questions)

Question [15]

- I. d) $-17/27$
- II. d) A negative rational number
- III. b) $(-65)^3$
- IV. a) 114
- V. a) 14
- VI. a) 2.7
- VII. a) 8, 64, 216
- VIII. a) Rs. 578.50
- IX. b) ϕ
- X. b) 5
- XI. d) 360°
- XII. b) $\frac{1}{2}$
- XIII. c) $\frac{1}{2}$
- XIV. (b) Direct proportion
- XV. (a) Class interval

Question 2

(a) Find the number of sides of a regular polygon whose exterior angle is 24° [2]

Ans. Let us assume the number of sides of the regular polygon be n ,

$$\text{Then, } n = 360^\circ / 24^\circ$$

$$n = 15$$

Therefore, the number of sides of a regular polygon is 15.

(b) If a labourer earns ₹672 per week, how much will he earn in 18 days? [2]

Sol: Let the labourer earn ₹ x in 18 days

So,

Days	7	18
------	---	----

We know that it is a direct variation.

So, $7: 672 = 18: x$

$$7/672 = 18/x$$

$$x = (18 \times 672)/7$$

$$= ₹1728$$

Money earned (in ₹)	672	x
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(c) What percent is 300 g of 2 kg

[2]

Ans: Required percentage = $[300 \text{ gram} / 2 \text{ kg} \times 100] \%$

It can be written as

$$= [300 \text{ gram} / (2 \times 1000 \text{ gram}) \times 100] \%$$

By further calculation

$$= [300 / (2 \times 1000) \times 100] \%$$

So we get

$$= (30/2) \%$$

$$= 15 \%$$

(d) Find the cube root of 21952 by prime factorization:

[2]

Sol:

$$\sqrt[3]{21952}$$

$$\begin{array}{r} 2 \overline{) 21952} \\ 2 \overline{) 1076} \\ 2 \overline{) 5488} \\ 2 \overline{) 2744} \\ 2 \overline{) 1372} \\ 2 \overline{) 686} \\ 7 \overline{) 343} \\ 7 \overline{) 49} \\ 7 \overline{) 7} \\ 1 \end{array}$$

$$2 \overline{) 1076}$$

$$2 \overline{) 5488}$$

$$2 \overline{) 2744}$$

$$2 \overline{) 1372}$$

$$2 \overline{) 686}$$

$$7 \overline{) 343}$$

$$7 \overline{) 49}$$

$$7 \overline{) 7}$$

$$1$$

$$= \sqrt[3]{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 7 \times 7 \times 7}$$

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

(e) Find the smallest natural number by which 1008 should be multiplied to make it a perfect square.

[2]

Sol:

It can be written as

$$1008 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 7$$

Here

After pairing the same kind of prime factors, one factor, 7 is left.

Now, multiplying 1008 by 7

We get a perfect square

Therefore, the required smallest number is 7.

$$\begin{array}{r} 2 \overline{) 1008} \\ 2 \overline{) 504} \\ 2 \overline{) 252} \\ 2 \overline{) 126} \\ 3 \overline{) 63} \\ 3 \overline{) 21} \\ 7 \overline{) 7} \\ 1 \end{array}$$

(f) Simplify: $[(5)^2 - (1/4)^{-2}] \times (3/4)^{-2}$ [2]

Sol: $[(5)^2 - (1/4)^{-2}] \times (3/4)^{-2}$
Let us simplify the given expression,
 $[(5)^2 - (1/4)^{-2}] \times (3/4)^{-2} = [25 - (4)^2] \times (4/3)^2$
 $= [25 - 16] \times (16/9)$
 $= 9 \times (16/9)$
 $= 16$

(g) If $n(A - B) = 12$, $n(B - A) = 16$ and $n(A \cap B) = 5$, find:

(i) $n(A)$

(ii) $n(B)$

(iii) $n(A \cup B)$

[3]

Solution:-

From the question it is given that,

$$\begin{aligned} \text{(i)} \quad n(A) &= n(A - B) + n(A \cap B) \\ &= 12 + 5 = 17 \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad n(B) &= n(B - A) + n(A \cap B) \\ &= 16 + 5 = 21 \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad n(A \cup B) &= n(A) + n(B) - n(A \cap B) \\ &= 17 + 21 - 5 \\ &= 38 - 5 \\ &= 33 \end{aligned}$$

Question 3

(a) Find the number of sides in a polygon if the sum of its interior angles is 1260° [2]

Sol: Sum of measures of all interior angles of polygons $= (2n - 4) \times 90^\circ$

Given, interior angle $= 1260^\circ$

$$1260 = (2n - 4) \times 90^\circ$$

$$1260/90 = 2n - 4$$

$$14 = 2n - 4$$

By transposing we get,

$$2n = 14 + 4$$

$$2n = 18$$

$$n = 18/2$$

$$n = 9$$

Therefore, the number of sides in a polygon is 9.

(b) If 13.25 % of a number is 159, find the number. [2]

Sol: Consider the number as x

$$13.25\% \text{ of } x = 159$$

$$13.25/100 \text{ of } x = 159$$

By further calculation

$$x = (159 \times 100) / 13.25$$

Multiply and divide by 100

$$x = (159 \times 100 \times 100) / 1325$$

So we get

$$x = (159 \times 4 \times 100) / 53$$

$$x = 3 \times 4 \times 100$$

$$x = 1200$$

Therefore, the number is 1200.

- (c) Find the discount and the discount percentage, when marked price = ₹ 780 and selling price = ₹ 721.50

[2]

Sol:

$$\text{marked price} = ₹ 780, \quad \text{selling price} = ₹ 721.50$$

$$\begin{aligned} \text{Discount} &= \text{M.P.} - \text{Selling price} \\ &= 780 - 721.50 = ₹ 58.50 \end{aligned}$$

$$\begin{aligned} \text{Discount \%} &= [\text{Discount} / \text{M.P.} \times 100] \% \\ &= [58.50 / 780 \times 100] \% \\ &= 5850 / 780 \% \\ &= 585 / 78 \% \\ &= 7.5 \% \end{aligned}$$

- (d) If $\xi = \{1, 2, 3, \dots, 9\}$, $A = \{1, 2, 3, 4, 6, 7, 8\}$ and $B = \{4, 6, 8\}$, then find.

(i) A'

(ii) $(A \cap B)'$

[2]

Sol:

$$\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$A = \{1, 2, 3, 4, 6, 7, 8\}$$

$$B = \{4, 6, 8\}$$

$$(i) A' = \xi - A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\} - \{1, 2, 3, 4, 6, 7, 8\}$$

$$A' = \{5, 9\}$$

$$(ii) (A \cap B)' = \{1, 2, 3, 5, 7, 9\}$$

- (e) Write the ones digit of the cube of each of the following numbers:

(i) 358

(ii) 987

- Ans.** (i) Unit digit of number 358 is 8, hence its cube will end in 2.
(ii) Unit digit of number 987 is 7, hence its cube will end in 3.

[2]

Section B

(Attempt any Four questions)

Question 4

- (c) If the angles of a pentagon are in the ratio 7 : 8 : 11 : 13 : 15, find the angles. [3]

Sol:-

From the question it is given that,

The angles of a pentagon are in the ratio 7 : 8 : 11 : 13 : 15

$$\begin{aligned}\text{Sum of measures of all interior angles of polygons} &= (2n - 4) \times 90^\circ \\ &= ((2 \times 5) - 4) \times 90^\circ = (10 - 4) \times 90^\circ \\ &= 6 \times 90^\circ = 540^\circ\end{aligned}$$

Let us assume the angles of the pentagon be $7a$, $8a$, $11a$, $13a$ and $15a$.

$$\begin{aligned}\text{Then, } 7a + 8a + 11a + 13a + 15a &= 540^\circ \\ 54a &= 540^\circ \\ a &= 540/54 \\ a &= 10^\circ\end{aligned}$$

$$\begin{array}{llll}\text{Therefore, the angles are } 7a &= 7 \times 10 &= 70^\circ \\ 8a &= 8 \times 10 &= 80^\circ \\ 11a &= 11 \times 10 &= 110^\circ \\ 13a &= 13 \times 10 &= 130^\circ \\ 15a &= 15 \times 10 &= 150^\circ\end{array}$$

- (d) A fort is provided with food for 80 soldiers to last for 60 days. Find how long would the food last if 20 additional soldiers join after 15 days. [3]

Sol:

Given:

A fort is provided with food for 80 soldiers to last for 60 days.

After 15 days, the food is sufficient for 80 soldiers for $(60 - 15)$ days = 45 days.

After 15 days, 20 additional soldiers join the fort.

So number of soldiers in the fort = $80 + 20 = 100$

We know that for 80 soldiers, the food is sufficient for = 45 days

For 1 soldiers, the food is sufficient for = (80×45) days

$\therefore$ For 100 soldiers, the food is sufficient for = $(80 \times 45)/100$ days
= 36 days.

- (c) The list price of an article is ₹ 800 and a dealer is selling it at a discount of 20 %. Find:

- (i) the selling price of the article.
- (ii) the cost price of the article if he makes 25% profit on selling it.

[4]

Solution:

- (i) It is given that M.P. = ₹ 800 Discount = 20%
 S.P. = $[1 - d/100]$ of M.P.
 S.P. = $[1 - 20/100]$ of ₹ 800
 S.P. = $80/100 \times 800$
 S.P. = ₹ 640
 Therefore, the selling price is ₹ 640.
- (ii) It is given that S.P. = ₹ 640 Profit = 25%
 S.P. = $[1 + P/100]$ of C.P.
 640 = $[1 + 25/100]$ of C.P.
 640 = $125/100$ of C.P.
 C.P. = $[640 \times 100/125]$
 C.P. = 128×4
C.P. = ₹ 512

Question 5

- (a) The ratio between an exterior angle and the interior angle of a regular polygon is 1 : 5.
 Find
 (i) the measure of each exterior angle
 (ii) the measure of each interior angle
 (iii) the number of sides in the polygon. [3]

Solution:-

From the question it is given that,

The ratio between an exterior angle and the interior angle of a regular polygon is 1: 5

Let us assume exterior angle be y

And interior angle be $5y$

We know that, sum of interior and exterior angle is equal to 180° ,

$$y + 5y = 180^\circ$$

$$6y = 180^\circ$$

$$y = 180^\circ/6$$

$$y = 30^\circ$$

(i) the measure of each exterior angle = $y = 30^\circ$

(ii) the measure of each interior angle = $5y = 5 \times 30^\circ = 150^\circ$

(iii) the number of sides in the polygon

Therefore, the number of sides of a regular polygon is 12.

- (b) Find the least number which must be added to 1750 make it a perfect square. Also, find the square root of the perfect square number so obtained: [3]

Sol:

We know that

By taking the square root

41^2 is less than 1750

So by taking 42^2

$164 - 150 = 14$ less

Adding 14, we get a square of 42 which is 1764.

$$\begin{array}{r} 42 \\ 4 \overline{) 1750} \\ \underline{16} \\ 150 \\ 82 \overline{) 150} \\ \underline{164} \\ 14 \end{array}$$

(c) If $P = \{x : x \in W \text{ and } x < 6\}$ and $Q = \{x : x \in N \text{ and } 4 \leq x \leq 9\}$, find

(i) $P \cup Q$

(ii) $P \cap Q$

(iii) $P - Q$

(iv) Is $P \cup Q$ a proper superset of $P \cap Q$?

[4]

Solution:-

From the question it is given that,

$$P = \{0, 1, 2, 3, 4, 5\}$$

$$Q = \{4, 5, 6, 7, 8, 9\}$$

(i) $P \cup Q = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$

(ii) $P \cap Q = \{4, 5\}$

(iii) $P - Q = \{0, 1, 2, 3\}$

(iv) By observing the above sets, $P \cup Q$ is a proper superset of $P \cap Q$.

Question 6

(a) One tap fills a tank in 20 minutes, and another tap fills it in 12 minutes. The tank being empty and if both taps are opened together, in how many minutes the tank will be full? [3]

Sol:

Given:

First tap fill a tank in 20 minutes

Second tap fill a tank in 12 minutes

In 1 minute first tank fills = $1/20$ parts

In 1 minute 2nd tank fills = $1/12$ parts

In 1 minute both 1st and 2nd tank fills = $1/20 + 1/12$

$$= (3+5)/60$$

$$= 8/60 \text{ parts}$$

$$= 2/15 \text{ parts}$$

$$\therefore \text{Both first and 2nd tank fills in} = 1/(2/15) \text{ minutes}$$

$$= 15/2 \text{ minutes}$$

$$= 7 \frac{1}{2} \text{ minutes}$$

(b) Calculate the amount and the compound interest on Rs 5000 in 2 years when the

rate of interest for successive years is 6% and 8% respectively.

[3]

Sol:

Principal for the first year	= Rs 5000	
Rate of interest	= 6% p.a.	
Interest for the first year	= Rs $(5000 \times 6 \times 1) / 100$	= Rs 50 × 6 = Rs 300
Amount at the end of first year	= Rs 5000 + Rs 300	= Rs 5300
Principal for the second year	= Rs 5300	
Rate of interest	= 8% p.a.	
Interest for the second year	= Rs $(5300 \times 8 \times 1) / 100$	= Rs 53 × 8 = Rs 424
Amount for the second year	= Rs 5300 + Rs 424	= Rs 5724
Compound interest for two years	= Final amount – (original) Principal	
	= Rs 5724 – Rs 5000	= Rs 724

- (c) In a straight contest, the loser polled 42% votes and lost by 14400 votes. Find the total number of votes polled. If the total number of eligible voters was 1 lakh, find what percentage of voters did not vote.

[4]

Sol:

It is given that

Losing candidate got 42% of the votes polled

Votes secured by winning candidate = $(100 - 42) \%$ of the votes polled
= 58 % of the votes polled

So the difference of votes = 58% – 42% = 16% of the votes polled

We know that , 16% of the votes polled = 14400

So the votes polled = $14400 \times 100/16$ = 90000

Total number of eligible voters = 100000

No. of voters who did not vote = 100000 – 90000 = 10000

Percentage of voters did not vote = $[10000/100000 \times 100] \%$
= 10000/1000 %
= 10 %

Question 7

- (a) Calculate the compound interest on Rs 6000 at 10% per annum for two years. [3]

Sol:

Given

Rate of interest = 10% per annum

Principal for the first year	= Rs 6000	
Interest for the first year	= Rs $(6000 \times 10 \times 1) / 100$	= Rs 600
Amount at the end of first year	= Rs 6000 + Rs 600	= Rs 6600
Principal for the second year	= Rs 6600	
Interest for the second year	= Rs $(6600 \times 10 \times 1) / 100$	= Rs 660
Amount for the second year	= Rs 6600 + Rs 660	= Rs 7260
compound interest for 2 years	= final amount – (original) Principal	
	= Rs 7260 – Rs 6000	= Rs 1260

(b) A man invests Rs 46875 at 4% per annum compound interest for 3 years.

Calculate:

- (i) Interest for the first year
- (ii) Amount standing to his credit at the end of second year
- (iii) Interest for the third year

[3]

Sol:

(i) Principal for the first year = Rs 46875 Rate of interest = 4% per annum

Interest for the first year = Rs $(46875 \times 4 \times 1) / 100$ = Rs 46875 / 25 = Rs 1875

Hence, interest for the first year is Rs 1875

(ii) Amount at the end of first year = Rs 46875 + Rs 1875

= Rs 48750

Principal for the second year = Rs 48750

Interest for the second year = Rs $(48750 \times 4 \times 1) / 100$

= Rs 48750 / 25 = Rs 1950

Amount at the end of second year = Rs 48750 + Rs 1950 = Rs 50700

Hence, the amount at the end of second year is Rs 50700

(iii) Principal for the third year = Rs 50700

Interest for the third year = Rs $(50700 \times 4 \times 1) / 100$

= Rs 507 × 4 = Rs 2028

Hence, the interest for the third year is Rs 2028

(c) Find the profit or loss percentage, when:

(i) C.P. = ₹ 400, S.P. = ₹ 468

(ii) C.P. = ₹ 13600, S.P. = ₹ 12104

[4]

Solution:

(i) It is given that

$$\begin{aligned}
 \text{C.P.} &= ₹ 400, \text{ S.P.} &= ₹ 468 \\
 \text{Profit} &= \text{S.P.} - \text{C.P.} &= 468 - 400 = ₹ 68 \\
 \text{Profit \%} &= (\text{Profit} \times 100) / \text{C.P.} &= (68 \times 100) / 400 = 17 \% \\
 \text{(ii) It is given that} & & \\
 \text{C.P.} &= ₹ 13600, \text{ S.P.} &= ₹ 12104 \\
 \text{Loss} &= \text{C.P.} - \text{S.P.} &= 13600 - 12104 = ₹ 1496 \\
 \text{Loss \%} &= [\text{Loss} / \text{C.P.} \times 100] \% &= [1496 / 13600 \times 100] \% \\
 &= 1496 / 136 \% &= 11 \%
 \end{aligned}$$

Question 8

- b. The number of goals scored by a football team in different matches is given below:
 3, 1, 0, 0, 0, 1, 1, 2, 2, 3, 1, 2, 0, 1, 0, 2, 3, 2, 0, 1, 0, 1, 1, 0, 2, 1, 2, 2, 3, 1, 0, 0,
 0, 1, 1, 0, 2, 3, 0, 1, 2, 0

Make a frequency distribution table using tally marks

[2]

Sol:

The frequency table for the given data is as follows:

Number of Goals Scored	Tally Marks	Frequency of Matches
0		14
1		13
2		10
3		5
Total		42

- b. A box contains 17 cards numbered 1, 2, 3,....., 17 and are mixed thoroughly. A card is drawn at random from the box. Find the probability that the number on that card is
- odd
 - prime
 - divisible by 2 and 3 both

[3]

Sol:

A box contains 17 cards numbered 1 to 17

So, the total number of outcomes = 17

(i) Card bearing an odd number

(1, 3, 5, 7, 9, 11, 13, 15, 17) = 9

Therefore,

Probability $P(E) = 9 / 17$

(ii) Prime numbers

(2, 3, 5, 7, 11, 13, 17) = 7

Therefore,

Probability $P(E) = 7 / 17$

(iii) Numbers divisible by 2 and 3 both

6, 12 = 2

Therefore,
Probability $P(E) = 2 / 17$

- c. A die is rolled once. Find the probability of getting
(i) a multiple of 3
(ii) not a multiple of 3

[2]

Sol:

Total outcomes of a die when rolled once:

1, 2, 3, 4, 5, 6 = 6

(i) Multiple of 3 = 3, 6

i.e, Favourable outcomes = 2

Therefore,

Probability $P(E) = 2 / 6 = 1 / 3$

(ii) Not a multiple of 3 = 1, 2, 4, 5

i.e Favourable outcomes = 4

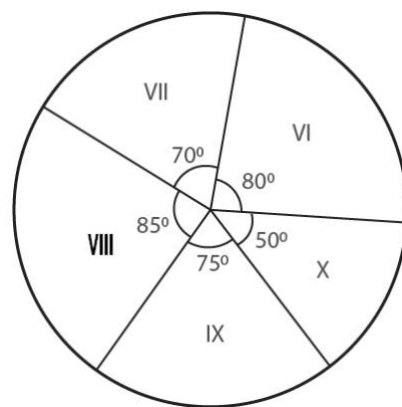
Therefore,

Probability $P(E) = 4 / 6 = 2 / 3$

- d. The adjoining pie chart shows the number of students enrolled in Class VI to Class X of a school.

If 1440 students are enrolled from VI to X, then answer the following questions:

- (i) How many students are enrolled in Class VIII?
(ii) How many students are more in Class IX than in Class X?
(iii) What is the sum of students enrolled in VII and VIII?



[3]

Sol:

Total number of students enrolled from VI to X = 1440 students

(i) Enrolment of class VIII = $(85 / 360^\circ) \times 1440 = 340$ students

(ii) Difference in X and IX class enrolment = $75^\circ - 50^\circ = 25^\circ$
 $(25 / 360^\circ) \times 1440 = 100$ students

Therefore, 100 students are more in class IX than in class X

(iii) Sum of students enrolled in VII and VIII classes = $70^\circ + 85^\circ = 155^\circ$
 $(155 / 360^\circ) \times 1440 = 620$ students

Therefore, the sum of students enrolled in Classes VI and VIII = 620 students
