

Class - 8th (Maths)

Section-I

- Q1 (i) (b) (ii) (a) (iii) (b) (iv) (b)
Q2 (i) (a) (ii) (b) (iii) (c) (iv) (c)
Q3 (i) (b) (ii) (c) (iii) (c) (iv) (c)
Q4 (i) (b) (ii) (a) (iii) (d) (iv) (c)
Q5 (i) (a) (ii) (c) (iii) (a) (iv) (c)
Q6 (i) (c) (ii) (B) (iii) (a) (iv) (b)

Section-II

- Q7 -47 OR $\frac{19}{7}$
Q8 $(a-b)(a+b)$
Q9 -1 OR 1
Q10 $x = 100$
Q11 $1 \text{ m}^3 = 1000 \text{ litres}$ OR 8 times
Q12 $14y - 8 = 13$
 $\Rightarrow 14y = 13 + 8$

$$\Rightarrow 14y = 21$$

$$\Rightarrow y = \frac{21}{14} = \frac{3}{2}$$

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

OR

$$\frac{3x}{2} = 18$$

$$\Rightarrow 3x = 36$$

$$\Rightarrow x = \frac{36}{3} = 12$$

xt-B

3

Q13 y-axis OR origin

Q14 loss.

True/False.

Q15 False

Q16 False

Q17 True

Q18 True or True

Q19 False.

Q20 False

Q21 False

Q22 False

Part-B

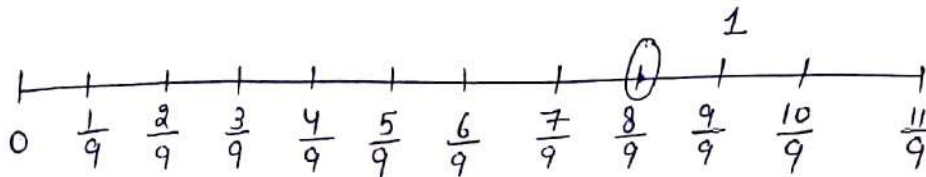
Q23

$$-\frac{7}{3} + x = \frac{3}{7}$$

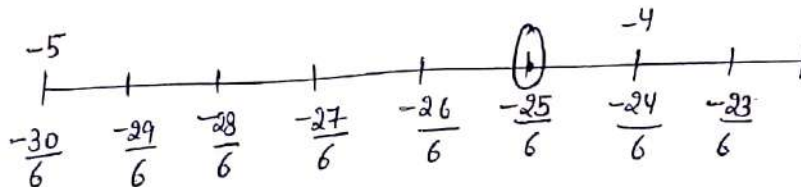
$$\Rightarrow x = \frac{3}{7} + \frac{7}{3} = \frac{9 + 49}{21} = \frac{58}{21}$$

OR

(i)



(ii)



Q24

Let first number be x

Second number is $66+x$

ATQ

$$\frac{x}{66+x} = \frac{2}{5}$$

$$\Rightarrow 5x = 132 + 2x$$

$$\Rightarrow 3x = 132$$

$$\Rightarrow x = 44 \text{ is the first number}$$

And second number will be $66+44 = 110$

Q25

Let the amount of money which Chameli had

in the beginning be x .

A.T.Q

$$(100 - 75)\% \text{ of } x = \text{Rs } 600$$

$$25\% \text{ of } x = \text{Rs } 600$$

$$\Rightarrow \frac{25}{100} \times x = \text{Rs } 600$$

$$\Rightarrow x = \text{Rs } 600 \times \frac{100}{25} = \text{Rs } 2400$$

So, Chomeli had Rs 2400 in the beginning.

OR

The shopkeeper buys 80 articles for Rs 2400

$$\text{cost of one article} = \frac{\text{Rs } 2400}{80} = \text{Rs } 30$$

$$\text{Profit percentage} = 16\%$$

A.T.Q

$$\text{C.P} = \frac{100}{100 + \text{Profit \%}} \times \text{S.P}$$

$$\Rightarrow 30 = \frac{100}{(100 + 16)} \times \text{SP}$$

$$\Rightarrow \frac{30 \times 116}{100} = \text{Rs } 34.80$$

Selling price of one article is Rs 34.80

Q26

$$(x+y)(2x+y) + (x+2y)(x-y)$$

$$\Rightarrow 2x^2 + xy + 2xy + y^2 + x^2 - xy + 2xy - 2y^2$$

$$\Rightarrow 3x^2 - y^2 + 4xy$$

Q27

$$\text{Side of rhombus} = 5 \text{ cm}$$

$$\text{Altitude} = 4.8 \text{ cm}$$

$$\text{Area of rhombus} = \text{Base} \times \text{Height}$$

$$= 5 \times 4.8 = 24 \text{ cm}.$$

Also, Area of rhombus = $\frac{1}{2} \times d_1 \times d_2$

$\Rightarrow 24 = \frac{1}{2} \times 8 \times d_2$

$\Rightarrow \frac{24 \times 2}{8} = 6 \text{ cm} = d_2$

Q.28

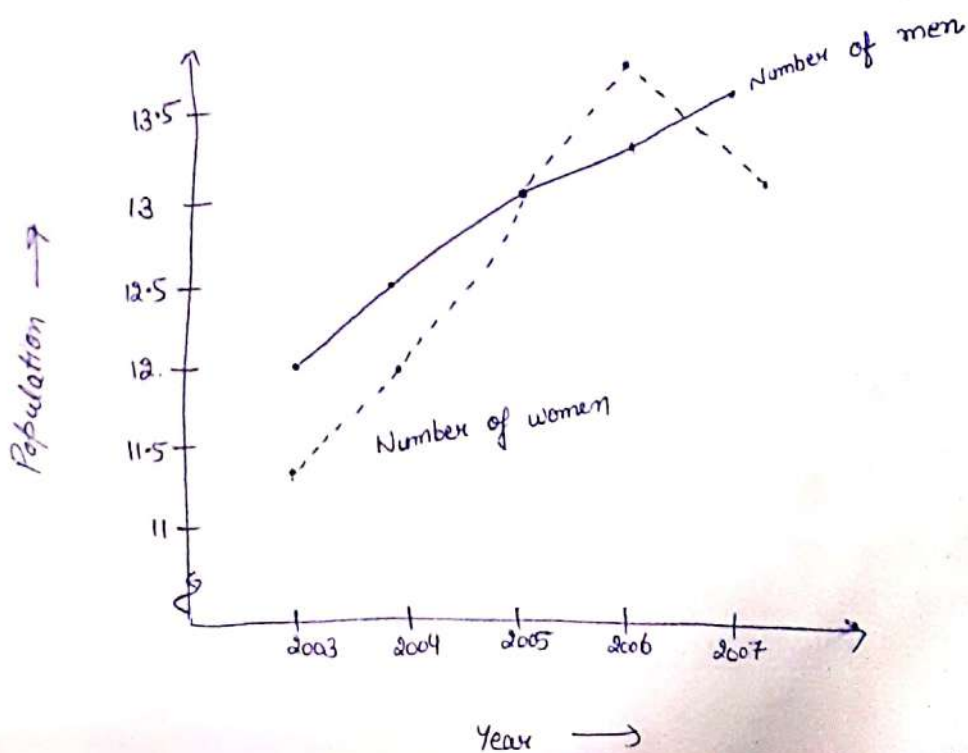
$$\begin{aligned} \frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}} &= \frac{25 \times 5^3 \times t^8}{10 \times t^4} \\ &= \frac{5^2 \times 5^3 \times t^{8-4}}{8 \times 2} \\ &= \frac{5^4 \times t^4}{2} = \frac{(5t)^4}{2} \end{aligned}$$

Q.29

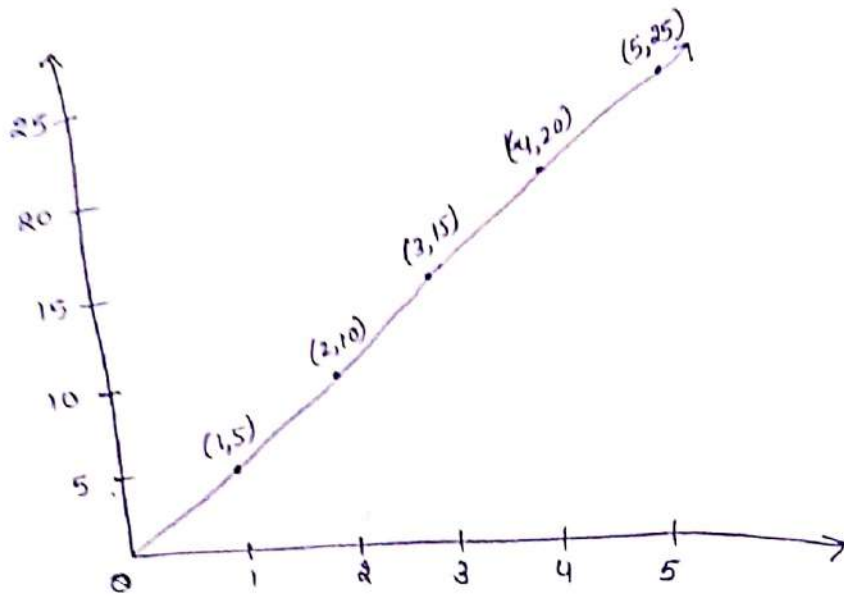
$12xy(9x^2 - 16y^2) \div 4xy(3x + 4y)$

$\Rightarrow \frac{12xy(3x - 4y)(3x + 4y)}{4xy(3x + 4y)} = 3(3x - 4y)$

Q.30



OR



Q31

Total number of books = 5

Thickness of each book = 20 mm

∴ Thickness of 5 books = $(5 \times 20) \text{ mm} = 100 \text{ mm}$

Thickness of each paper sheet = 0.016 mm

∴ Thickness of 5 paper sheets = $(5 \times 0.016) \text{ mm}$
 $= 0.08 \text{ mm}$.

Hence, total thickness of stack = $100 \text{ mm} + 0.08 \text{ mm}$
 $= 100.08 \text{ mm}$
 $= 1.0008 \times 10^2 \text{ mm}$

Q32

$$(i) \quad 9x^2y^2(3z-24) \div 27xy(z-8)$$

$$\Rightarrow \frac{9x^2y^2(3z-24)}{27xy(z-8)} = \frac{9x^2y^2 \times 3(\cancel{z-8})}{\cancel{27}xy(\cancel{z-8})}$$

$$= xy$$

$$12a^8b^8 \div (-6a^6b^4)$$

$$\Rightarrow \frac{12a^8b^8}{-6a^6b^4} = -2a^2b^4$$

Q.33
Let the granddaughter's present age = x years.
Then, grandfather's present age = $10x$ years — (i)
Also, grandfather's age = $(x + 54)$ years — (ii)

Thus by (i) & (ii) we get

$$(x + 54) = 10x$$

$$\Rightarrow x + 54 = 10x$$

$$\Rightarrow 54 = 10x - x$$

$$\Rightarrow \frac{54}{9} = x \quad \Rightarrow x = 6 \text{ Ans}$$

\therefore Granddaughter's present age = 6 years
and grandfather's present age = 60 years.

OR

Let the three consecutive multiples of 8 be $8x$,
 $8(x+1)$ and $8(x+2)$.

$$\text{Now, } 8x + 8x + 8 + 8x + 16 = 888$$

$$\Rightarrow 24x + 24 = 888$$

$$\Rightarrow 24x = 888 - 24$$

$$\Rightarrow 24x = 864$$

$$\Rightarrow x = 36$$

Thus the required three multiples of 8 are
288, 296 and 304.

Q34 The 7 rational numbers are

$$\frac{97}{160}, \frac{98}{160}, \frac{99}{160}, \frac{100}{160}, \frac{101}{160}, \frac{102}{160}, \frac{103}{160}, \frac{104}{160}$$

There are many more such rational numbers.

$$\left. \begin{array}{l} \frac{3}{5} = \frac{3}{5} \times \frac{4}{4} = \frac{12}{20} \quad \text{and} \quad \frac{3}{4} = \frac{3}{4} \times \frac{5}{5} = \frac{15}{20} \\ \therefore \frac{12}{20} \times \frac{8}{8} = \frac{96}{160}, \quad \frac{15}{20} \times \frac{8}{8} = \frac{120}{160} \end{array} \right\}$$

Q35 We have $P = \text{Rs } 60000$ and $\text{Rate} = 12\%$ per annum

(i) After 6 months

Rate will become = 6% per annum

Time will be = 1 year.

$$\therefore A = P \left(1 + \frac{R}{100} \right)^n = 60000 \left(1 + \frac{6}{100} \right)^1$$

$$= 60000 \times \frac{106}{100} = \text{Rs } 63600$$

(ii) After 1 year

Rate will become = 6% per annum

Time will be = 2 half years.

$$\therefore A = P \left(1 + \frac{R}{100} \right)^n = 60000 \left(1 + \frac{6}{100} \right)^2$$

$$= 60000 \times \frac{106}{100} \times \frac{106}{100}$$

$$= \text{Rs } 67416$$

OR

We have, Radius of the cylindrical tank = 1.5m
and length = 7m.

$$\begin{aligned}\therefore \text{Volume of tank} &= \pi r^2 h = \pi (1.5)^2 \times 7 \\ &= 49.5 \text{ m}^3 \\ &= 49500 \text{ litre}\end{aligned}$$

$$[1 \text{ m}^3 = 1000 \text{ L}]$$

Q36

$$(i) (a+b)(c-d) + (a-b)(c+d) + 2(ac+bd)$$

$$\Rightarrow ac - ad + bc - bd + ac + ad - bc - bd + 2ac + 2bd$$

$$\Rightarrow 4ac$$

$$(ii) (m^2 - n^2 m)^2 + 2m^3 n^2$$

$$\Rightarrow m^4 + n^4 m^2 - 2m^2 n^2 m + 2m^3 n^2$$

$$\Rightarrow m^4 + n^4 m^2 - \cancel{2m^3 n^2} + \cancel{2m^3 n^2}$$

$$\Rightarrow m^4 + n^4 m^2$$