

(SECTION-B)

Q. No. 6

- a. Five years ago, age of father was thrice the age of his son. If son is 30 years old now, what is current age of father?
- b. A man pays 10% of his income as income tax. If his Income Tax amounts to Rs 1500, what is his income?
- c. The arithmetic mean of a list of 6 numbers is 20. If we remove one of the numbers, the average of the remaining numbers is 15. What is the number that was removed?
- d. Find the missing one:
(i) 8, 4, 32, 7, 5 _____ (ii) 17, 19, 23, _____, 31, 37

Q. No. 7

- a. The diameter of a round table is 7 meter. How much distance a person will walk around it?
- b. In a class, there are 18 boys who are over 160 cm tall. If these constitute three-fourths of the boys and the total number of boys is two-thirds of the total number of students in the class, what is the number of girls in the class?
- c. Distinguish IQ & EQ. what are the factors which affect the I.Q.?
- d. A point is selected at random inside a rectangle and perpendiculars are drawn on each side from the point. The Sum of these perpendiculars is 240cm. If length of rectangle is 3-times the width. What will be perimeter of rectangle?

Q. No. 8

- a. It takes 3 liters of paint to cover an area of 24 square meters. What percentage increase in the quantity of paint would be required to cover an area of 50.4 square meters?
- b. An automobile travels 3 km towards south, 4 km towards west, 5 km towards north and 2 km towards south-east. How far is it from its starting position?
- c. Tahir started a business with a capital of Rs. 15,000. After 5 months Umar also joined him with an investment of Rs. 30,000. At the start of 9th month, Usman joined them by investing Rs. 45,000. At the end of the year they earned a profit of Rs. 406,000. Find the share of each one.
- d. A man left his property of Rs. 640,000. A debt of Rs. 40,000 was due to him and Rs. 5,000 was spent on his burial. Distribute the amount between his widow, one daughter and two sons according to the Islamic Law.

Mock Exams July 2023

(SECTION - B)

Q# 6

(a)

	5 years ago	now = M.A
Father	$3x$	$3x + 5 = ?$
Son	x	$x + 5 = 30$

Since $x + 5 = 30$

$$x = 30 - 5$$

$$x = 25$$

put value of 'x' in required expression

$$3x + 5$$

$$= 3(25) + 5$$

$$= 75 + 5$$

$$= 80$$

Father's age now = 80 years.

(b)

percentage of tax = 10%

Income tax amount = Rs. 1500

Income = ?

Let income = x

According to given condition

\therefore 10% of income is Rs. 1500

$$\Rightarrow \frac{10}{100}(x) = 1500$$

$$10(x) = 1500 \times 100$$

Date: _____

Day: _____

$$x = \frac{1500 \times 100}{100}$$

$$x = 15000$$

Hence

Write the final answer in the form of statement

(C)

$$A.M = 20$$

$$\text{Total no.} = 6$$

The arithmetic mean of 6 numbers is 20
let the numbers be

$$n_1, n_2, n_3, n_4, n_5, n_6$$

$$\Rightarrow \text{Mean} = \frac{n_1 + n_2 + n_3 + n_4 + n_5 + n_6}{6}$$

$$20 = \frac{n_1 + n_2 + n_3 + n_4 + n_5 + n_6}{6}$$

$$20 \times 6 = n_1 + n_2 + n_3 + n_4 + n_5 + n_6$$

$$120 = n_1 + n_2 + n_3 + n_4 + n_5 + n_6 \quad \text{--- (1)}$$

If one number is removed

i.e. n_6

the arithmetic mean becomes 15

$$\Rightarrow \text{Mean} = \frac{n_1 + n_2 + n_3 + n_4 + n_5}{5}$$

$$15 = \frac{n_1 + n_2 + n_3 + n_4 + n_5}{5}$$

$$75 = n_1 + n_2 + n_3 + n_4 + n_5 \quad \text{--- (2)}$$

using (2) in (1)

$$\Rightarrow 120 = 75 + n_6$$

Date: _____

Day: _____

$$120 - 75 = 45$$

$$45 = 45$$

Hence

$$\boxed{\text{removed no.} = 45}$$

(d)

(i) 8, 4, 32, 7, 5, _____

(ii) 17, 19, 23, _____, 31, 37

Attempt and upload a single qs at a time. Work on the pointed mistakes and then upload the next answer.

Q#7

(a)

$$\text{diameter} = d = 7\text{m}$$

$$\text{circumference} = ?$$

$$\text{circumference} = 2\pi r$$

for 'r'

$$r = d/2$$

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

$$r = 3.5$$

$$\begin{array}{r} 3.5 \\ 2\overline{)7} \\ \underline{6} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

Now $C = 2\pi(3.5)$

Date: _____

Day: _____

$$C = 2(3.14)(3.5)$$

$$C = 2(10.99)$$

$$\begin{array}{r} 3.14 \\ \times 3.5 \\ \hline 1570 \\ 9420 \\ \hline 10.990 \end{array}$$

$$\begin{array}{r} 10.99 \\ \times 2 \\ \hline 21.98 \end{array}$$

$$C = 21.98 \text{ m}$$

Hence a person will have to walk a distance of 21.98 or approximately 22 meters.

(b)

$$\text{Boys (160cm)} = 18$$

$$\text{And } 18 \text{ boys} = \frac{3}{4} \text{ th of all boys}$$

$$\Rightarrow 3:1$$

According to given condition

$$\frac{3}{4} \text{ boys} = 18$$

$$\text{boys} = \frac{18 \times 4}{3}$$

$$\text{boys} = 24$$

These are total no. of boys in class

Now again we have

boys are $\frac{2}{3}$ of all class
which means the ratio of

boys : girls

$$\Rightarrow 2:1$$

According to given condition

$$\frac{2}{3} \text{ class} = 24$$

$$\text{class} = \frac{24 \times 3}{2}$$

$$\text{Total students} = 36$$

To find total no of girls in class

$$\Rightarrow \text{Total students} = \text{Boys} + \text{girls}$$

$$\Rightarrow \text{girls} = \text{students} - \text{boys}$$

$$\text{girls} = 36 - 24$$

$$\boxed{\text{girls} = 12}$$

Q#8 (a)

liters	Area
3l ↑	24m ² ↑
x l	50.4m ²

percentage increase = ?

let x be the liters of paint required to cover an area of 50.4m²

Using direct proportion:

$$\frac{x}{3} = \frac{50.4}{24}$$

$$x = \frac{(50.4)(3)}{24}$$

$$x = \frac{50.4}{8}$$

$$x = 6.3$$

$$\begin{array}{r} 6.3 \\ 8 \overline{)50.4} \\ \underline{48} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

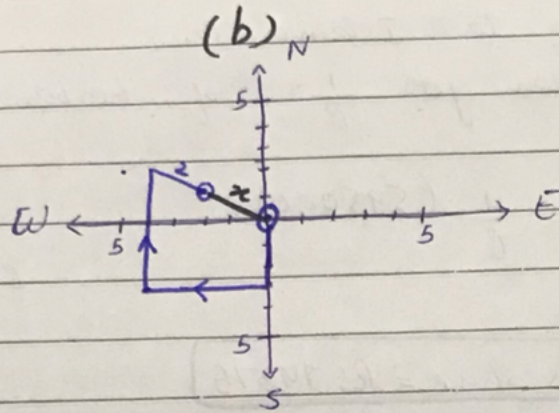
For Percentage increase

$$\text{percentage increase} = \frac{6.3 - 3}{3} \times 100$$

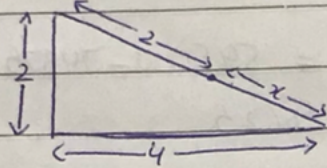
$$\text{percentage increase} = \frac{3.3}{3} \times 100$$

$$\text{percentage increase} = \frac{330}{3} \%$$

$$\boxed{\text{percentage increase} = 110\%}$$



we have



By pythagoras theorem

$$(2)^2 + (4)^2 = (2+x)^2$$

$$4 + 16 = 4 + x^2 + 4x$$

$$x^2 + 4x - 16 = 0$$

$$x = \frac{-4 \pm \sqrt{16 - 4(-16)}}{2 \cdot (1)}$$

$$x = \frac{-4 \pm \sqrt{16 + 64}}{2}$$

$$x = \frac{-4 \pm \sqrt{80}}{2}$$

$$\begin{array}{r} 4 \\ \times 16 \\ \hline 82 \\ 16 \\ \hline 98 \\ 2 \\ \hline 418 \\ 18 \end{array}$$

(d)
Total money = Rs. 640,000

debt = Rs. 40,000

burial = Rs. 5,000

widow, 2 sons, 1 daughter. = ?

Firstly, we need money after giving away debt and burial money

$$\Rightarrow \text{money} = 640,000 - 40,000 - 5,000$$

$$\text{money} = 595,000$$

$$\begin{array}{r} 64000 \\ - 4000 \\ \hline 60000 \\ - 500 \\ \hline 59500 \end{array}$$

Date: _____

Day: _____

According to Islamic law
widow gets $\frac{1}{8}$ th of husband's property.

$$\Rightarrow \frac{1}{8} (595000)$$

$$\text{widow's share} = \text{Rs. } 74375$$

$$\text{Remaining money} = 595000 - 74375$$

$$\text{Remaining} = 520625$$

$$\begin{array}{r} 74375 \\ 8 \overline{) 595000} \\ \underline{56} \\ 35000 \\ \underline{32} \\ 3000 \\ \underline{24} \\ 600 \\ \underline{56} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

$$\begin{array}{r} 595000 \\ - 74375 \\ \hline 520625 \end{array}$$

The ratio of shares between 2 sons
and one ~~day~~ daughter is
2 : 2 : 1

$$\text{Total parts} = 2 + 2 + 1$$

$$\text{son's share} = \frac{2}{5} (520625)$$

$$\text{parts} = 5$$

And

$$\text{daughter's share} = \frac{1}{5} (520625)$$

$$\Rightarrow \text{son's share} = 2(104125)$$

$$\text{son's share} = 208250$$

$$\Rightarrow \text{daughter's share} = 104125$$

Hence

$$\text{each son's share} = \text{Rs. } 208250$$

$$\text{daughter's share} = \text{Rs. } 104125$$

Rough:-

$$\begin{array}{r} 74375 \\ 104125 \\ 208250 \\ 208250 \\ \underline{74375} \\ 595000 \end{array}$$

(C)

$$\text{Tahir} = \text{Rs. } 15000$$

$$\text{Umar} = \text{Rs. } 30,000 \quad (5^{\text{th}} \text{ month})$$

$$\text{Usman} = \text{Rs. } 45000 \quad (9^{\text{th}} \text{ month})$$

$$\text{Profit} = \text{Rs. } 406000$$

$$\begin{aligned} \text{Tahir's total investment} &= 15000 \times 12 \\ &= 180,000 \end{aligned}$$

$$\begin{aligned} \text{Umar's total investment} &= 30,000 \times 7 \\ &= 210,000 \end{aligned}$$

$$\begin{aligned} \text{Usman's total investment} &= 45000 \times 4 \\ &= 180,000 \end{aligned}$$

The ratios of their share is
 $180000 : 210000 : 180000$

$$18 : 21 : 18$$

$$6 : 7 : 6$$

$$\text{Total parts} = 6 + 7 + 6 = 19$$

$$\text{Tahir's share} = \frac{6}{19}$$

$$\text{Tahir's share} = \frac{6}{19} (406000) = \frac{2436000}{19}$$

$$= \text{Rs. } 127121.5$$

$$\text{Umar's share} = \frac{7}{19} (406000) = \frac{2842000}{19}$$

$$= \text{Rs. } 14957.8$$

$$\text{Usman's share} = \frac{6}{19} (406000) = \frac{2436000}{19}$$

$$= \text{Rs. } 127121.5$$

$$\begin{array}{r} 15000 \\ \times 12 \\ \hline 30000 \\ 50000 \times \\ \hline 180000 \\ 3000 \end{array}$$