

Ch-2 → Linear Equations in One Variable

- Q1 ₹ 2700 is to be divided among Asha, Nisha and Vidhi such that Asha gets ₹ 300 less than Nisha and Vidhi gets half of what Asha gets.
- Q2 One third of total number of students in a class are in Chemistry laboratory, one fourth are in Physics laboratory, one sixth are in Biology laboratory and twelve are in Maths lab. How many students are there in the class?
- Q3 The sum of the digits of a two digit number is 3. If we subtract 9 from the number, the digits are interchanged. Find the original number.
- Q4 The age of A is one-third of the age of B. After 15 years, the age of A will be half of the age of B. Find their present ages.
- Q5 Hari bought oranges at ₹ 10 a dozen, and bananas at ₹ 4.50 a dozen. If he paid ₹ 34 for these fruits, of which oranges were $2\frac{1}{2}$ dozen, how many dozen of bananas did he buy?
- [Hint → Cost of oranges = ₹ 25, let Hari bought x dozen of bananas
 ATQ
 $25 + 4.5x = 34$]
- Q6 The width of a rectangle is two-thirds of its length. If the perimeter of the rectangle is 135 cm. Find the dimensions of the rectangle.
- Q7 If $P = x+1$ and $\frac{4P-3}{2} - \frac{3x+2}{5} = \frac{3}{2}$
 find x

Q8 Solve the following equations :-

(2)

$$(i) \frac{7x-1}{4} - \frac{1}{3} \left(2x - \frac{1-x}{2} \right) = \frac{10}{3}$$

$$(ii) \frac{5(x+12) - 17(2-x)}{7x-1} = 8$$

$$(iii) \frac{5(x+6) - 15(2-x)}{3x-1} = 10$$

$$(iv) \frac{5(3x+1)}{6} - \frac{3(2x-5)}{8} = \frac{3x}{4} + 3\frac{1}{3}$$

$$(v) 6.5x + \frac{x}{4} = 2.25x + 3$$

Q9 A man was engaged as typist for the month of February in 2008. He was paid ₹ 500 per day but ₹ 100 per day were deducted for the days he remained absent. If he received ₹ 9100 as salary for the month, for how many days did he work?

[Hint → ∵ Feb 2008 had 29 days
let typist worked = x days
Total absent = $29-x$

ATQ $500x - 100(29-x) = 9100$

Q10 Solve the following equations and verify your answer:

$$(i) \frac{4x-3}{10x-9} = \frac{0.05}{0.25}$$

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

$$(iii) \frac{3}{2x-(3-4x)} = \frac{1}{3}$$

$$(iv) \frac{5(x+6) - 15(2-x)}{3x-1} = 10$$

$$(v) x - \frac{x-2}{7} + 36 = \frac{9x+7}{2}$$

ANSWERS

(3)

- 1) Nisha's share = ₹ 1260
Asha's " = ₹ 960
Vidhi's " = ₹ 480

2) Total students = 48

3) $x = 1$; Original no. = 21

4) A = 15 years ; B = 45 years

5) 2 dozen

6) length = 40.5 cm , breadth = 27 cm

7) $x = 1$

8) (i) $\frac{41}{11}$ (ii) 1 (iii) 1 (iv) $\frac{5}{8}$ (v) $\frac{2}{3}$

9) 20 days

10) (i) $x = \frac{3}{5}$

(ii) $x = 25$

(iii) $x = 2$

(iv) $x = 1$

(v) $x = 9$

A) M.C.Q's (Multiple Choice Questions)

Q1 Which of the following is not a linear equation in one variable?

- (a) $3x + 2 = 0$ (b) $2y - 4 = y$ (c) $x + 2y = 7$ (d) $2(x - 3) + 7 =$

Q2 Fifteen years from now Ravi's age will be four times his present age. What is Ravi's present age?

- (a) 4 years (b) 5 years (c) 6 years (d) 3 years

Q3 The solution of the equation $\frac{8x - 3}{3x} = 2$ is

- (a) $\frac{1}{2}$ (b) $\frac{2}{3}$ (c) $\frac{3}{2}$ (d) $\frac{1}{3}$

Q4 If the sum of three consecutive integers is 51, then the largest integer is

- (a) 16 (b) 17 (c) 18 (d) 19

Q5 The sum of three consecutive multiples of 3 is 45. The middle number is

- (a) 12 (b) 15 (c) 18 (d) 21

B) Objective type questions

- 1) How many solutions a linear equation can have?
- 2) What is the highest degree of the variable involved in a linear equation?
- 3) If the value of x is 5 then $3x + \underline{\hspace{2cm}} = 20$
- 4) The general form of linear equation is $ax + b = c$, where $a \neq \underline{\hspace{2cm}}$
- 5) A number which when added to three times of itself gives 20 is $\underline{\hspace{2cm}}$

ANSWERS

M.C.Q's

- | | |
|------|------|
| 1) C | 4) C |
| 2) b | 5) b |
| 3) C | |

Objective type Questions

- 1) exactly one
- 2) 1
- 3) 5
- 4) 0
- 5) 5