

1958

1. (i) Solve the equation :

$$2.9 + 0.6x = 3.5x - 4.93.$$

- (ii) If $a + b = 12$ and $\frac{a}{b} = 3$ find the values of a and b .

2. (i) A matchbox contains 50 matches and weighs M ounces ; the empty box weighs N ounces.

(a) What is the weight of 1 match ?

(b) How many matches weigh 1 ounce ?

(ii) Telegraph poles along a road are x yards apart. What is the distance in perches between the 1st and the 78th pole?

3. (i) If $2x + 3a$ is equal to 19 when $a = 7$, what is its value when $a = 14$, the value of x remaining constant?

(ii) If $\frac{1}{2} = \frac{1}{x} + \frac{1}{5}$ and $\frac{1}{6} = \frac{1}{y} - \frac{1}{8}$ find the value of $y - x$.

4. (i) Show that $a - 1$ is a factor of $a^3 - 73a + 72$ and find the other factors.

(ii) Factorize $4xy + 8x + 6y + 12$.

5. If $\frac{x-3}{4} - \frac{2(x-y)}{3} + \frac{x+9}{12} = 0$ prove that $x = 2y$.

6. A girl spent 9s. 9d. in buying Christmas cards, some at 3d. each, and the rest at 4d. each. She spent 5s. 6d. on postage, the postage on each card being 2d. How many cards of each kind did she buy?

7. (a) $2x$ is an even number. Write down the two odd numbers which are nearest to $2x$.

(b) If the sum of the squares of these two odd numbers is 202, find the numbers.

8. (i) Simplify :

$$\frac{b-a}{ab} - \frac{b-c}{bc} + \frac{c+a}{ca}$$

(ii) Find the value of :

$$\frac{2a^3 - a^2 - 10a}{a^3 + a^2 - 2a} \text{ when } a = 1.75.$$