

VIII Homework - 17

Solve

$$1) \frac{x+1}{5} = \frac{1}{15}$$

$$2) 2(7b+12) = 24$$

$$3) \frac{5x-7}{3x} = 2$$

$$4) \frac{6}{2x-(3-4x)} = \frac{2}{3}$$

$$5) \frac{3x+5}{2x+7} = 4$$

$$6) 4(3w+2) - 5(6w-1) = 2(w-8) - 6(7w-4) + 4w$$

$$7) 3(5x-5) - 2(9x-8) = 4(8x-13) - 17$$

$$8) 5x - \frac{3}{2} = 2x + \frac{7}{2}$$

$$9) m = \frac{4}{5}(m-10)$$

$$10) y - \frac{y-1}{2} = 1 - \frac{y-2}{3}$$

VIII Homework-17 (Linear Equations in one variable - Answers)

$$1) \frac{x+1}{5} = \frac{1}{15}$$

$$\Rightarrow \frac{x}{5} = \frac{1}{15} - 1$$

$$\Rightarrow \frac{x}{5} = \frac{1-15}{15}$$

$$\Rightarrow \frac{x}{5} = \frac{-14}{15}$$

$$\therefore x = \frac{-14 \times 5}{15 \cdot 3}$$

$$x = \frac{-14}{3}$$

$$2) 2(7b+12) = 24$$

$$\Rightarrow 14b+24 = 24$$

$$\Rightarrow 14b = 24-24$$

$$\Rightarrow 14b = 0$$

$$\therefore b = \frac{0}{14} = \underline{\underline{0}}$$

$$3) \frac{5x-7}{3x} = 2$$

$$\Rightarrow 5x-7 = 6x$$

$$\Rightarrow 5x-6x = 7$$

$$\Rightarrow -x = 7$$

$$\therefore x = \underline{\underline{-7}}$$

$$4) \frac{6}{2x-(3-4x)} = \frac{2}{3}$$

$$\Rightarrow \frac{6}{2x-3+4x} = \frac{2}{3}$$

$$\Rightarrow \frac{6}{6x-3} = \frac{2}{3}$$

$$\Rightarrow 18 = 2(6x-3)$$

$$\Rightarrow 2(6x-3) = 18$$

$$\Rightarrow 6x-3 = 9$$

$$\Rightarrow 6x = 12$$

$$\Rightarrow x = \frac{12}{6}$$

$$\therefore x = \underline{\underline{2}}$$

$$5) \frac{3x+5}{2x+7} = 4$$

$$\Rightarrow 3x + 5 = 4(2x + 7)$$

$$\Rightarrow 3x + 5 = 8x + 28$$

$$\Rightarrow 3x - 8x = 28 - 5$$

$$\Rightarrow -5x = 23$$

$$\therefore x = \underline{\underline{\frac{-23}{5}}}$$

$$6) 4(3w + 2) - 5(6w - 1) = 2(w - 8) - 6(7w - 4) + 4w$$

$$\Rightarrow 12w + 8 - 30w + 5 = 2w - 16 - 42w + 24 + 4w$$

$$\Rightarrow -18w + 13 = -36w + 8$$

$$\Rightarrow 18w = -5$$

$$\therefore w = \underline{\underline{\frac{-5}{18}}}$$

$$7) 3(5x - 5) - 2(9x - 8) = 4(8x - 13) - 17$$

$$\Rightarrow 15x - 15 - 18x + 16 = 32x - 52 - 17$$

$$\Rightarrow -3x + 1 = 32x - 69$$

$$-35x = -70$$

$$\therefore x = \underline{\underline{\frac{-70}{-35} = 2}}$$

$$8) 5x - \frac{3}{2} = 2x + \frac{7}{2}$$

$$\Rightarrow 5x - 2x = \frac{7}{2} + \frac{3}{2}$$

$$\Rightarrow 3x = \frac{10}{2}$$

$$x = \underline{\underline{\frac{5}{3}}}$$

$$9) m = \frac{4}{5}(m - 10)$$

$$\Rightarrow 5m = 4m - 40$$

$$\Rightarrow 5m - 4m = -40$$

$$\therefore \underline{\underline{m = -40}}$$

$$10) y - \frac{y-1}{2} = 1 - \frac{y-2}{3}$$

$$\Rightarrow \frac{2y - (y-1)}{2} = \frac{3 - (y-2)}{3}$$

$$\Rightarrow \frac{2y-y+1}{2} = \frac{3-y+2}{3}$$

$$\Rightarrow \frac{y+1}{2} = \frac{5-y}{3}$$

$$\Rightarrow 3(y+1) = 2(5-y)$$

$$\Rightarrow 3y+3 = 10-2y$$

$$\Rightarrow 5y = 7$$
$$y = \frac{7}{5}$$