

9) Solve the following equations:

a) $\frac{5x}{6} + 8 = 5 - \frac{2x}{3}$

$$6 \left[\frac{5x}{6} + 8 \right] = 6 \left[5 - \frac{2x}{3} \right]$$

$$5x + 48 = 30 - 4x$$

$$9x = -18$$

$$x = -2$$

b) $\frac{3}{2x+4} = \frac{1}{x+2} - 2$

$$2(x+2) \left[\frac{3}{2(x+2)} \right] = \left[\frac{1}{x+2} - 2 \right] 2(x+2)$$

$$3 = 2 - 2 \cdot 2 \cdot (x+2)$$

$$3 = 2 - 4(x+2)$$

$$3 = 2 - 4x - 8$$

$$3 = -4x - 6$$

$$9 = -4x$$

$$-\frac{9}{4} = x$$

c) $|2x - 3| = 5$

$$2x - 3 = 5 \quad \text{OR} \quad 2x - 3 = -5$$

$$2x = 8 \quad \text{OR} \quad 2x = -2$$

$$x = 4 \quad \text{OR} \quad x = -1$$

10) Maria bought two plots of land for a total of 140,000. On the first plot, she made a profit of 15%. On the second, she lost 10%. Her total profit was \$7250. How much did she pay for each piece of land?

$$\left. \begin{array}{l} x = \text{land that made 15\% profit} \\ y = \text{land that lost 10\%} \end{array} \right\} \begin{array}{l} x + y = 140,000 \\ \text{or } y = 140,000 - x \end{array}$$

$$.15x - .10y = 7250$$

$$.15x - .10(140,000 - x) = 7250$$

$$.15x - 14,000 + .1x = 7250$$

$$.25x = 21,250$$

$$x = 85,000$$

She spent \$85,000 on land that made money
and \$55,000 on land that lost money