Samples **Equation of a straight line SOLUTIONS**

1. To determine whether the given line passes through the point $(x_1, y_1) = (4, -10)$, we need to substitute the coordinates of the point into the equation of the line. Now,

$$\begin{aligned} -2y - 10 &= -14x, \text{ so} \\ -2 \times (-10) - 10 &= -14 \times 4 \\ 20 - 10 &= -56 \\ 10 &= -56 \end{aligned}$$

The last statement is **not true**, so our line **does not** pass through the point $(4, -10)$.

2. To determine whether the given line passes through the point $(x_1, y_1) = (-7, -10)$, we need to substitute the coordinates of the point into the equation of the line. Now,

$$\begin{aligned} 8y &= -80 + 56x, \text{ so} \\ 8 \times (-10) &= -80 + 56 \times (-7) \\ -80 &= -80 - 392 \\ -80 &= -472 \end{aligned}$$

The last statement is **not true**, so our line **does not** pass through the point $(-7, -10)$.

3. To determine whether the given line passes through the point $(x_1, y_1) = (-1, -6)$, we need to substitute the coordinates of the point into the equation of the line. Now,

$$\begin{aligned} -100x &= -30 + 10y, \text{ so} \\ -100 \times (-1) &= -30 + 10 \times (-6) \\ 100 &= -30 - 60 \\ 100 &= -90 \end{aligned}$$

The last statement is **not true**, so our line **does not** pass through the point $(-1, -6)$.

4. To determine whether the given line passes through the point $(x_1, y_1) = (-4, 0)$, we need to substitute the coordinates of the point into the equation of the line. Now,

$$\begin{aligned} -45 &= 5y + 5x, \text{ so} \\ -45 &= 5 \times 0 + 5 \times (-4) \\ -45 &= -20 \end{aligned}$$

The last statement is **not true**, so our line **does not** pass through the point $(-4, 0)$.

5. To determine whether the given line passes through the point $(x_1, y_1) = (9, 12)$, we need to substitute the coordinates of the point into the equation of the line. Now,

$$\begin{aligned} 8y &= 16x - 48, \text{ so} \\ 8 \times 12 &= 16 \times 9 - 48 \\ 96 &= 144 - 48 \\ 96 &= 96 \end{aligned}$$

The last statement is **true**, so our line **does** pass through the point $(9, 12)$.