Samples **Equation of a straight line SOLUTIONS**

1. To find the equation of the new line, we first need the gradient of the original line. Now,

$$\begin{aligned} 15 &= -3y, \text{ so} \\ 3y &= -15 \\ y &= -5 \end{aligned}$$

Hence the gradient of the original line is $m_0 = 0$.
The original line is horizontal (its gradient is equal to 0), so the new line is vertical and has an equation of the form $x = c$. The point $(3, -6)$ lies on the new line, so the equation of the new line is $x = 3$.

2. To find the equation of the new line, we first need the gradient of the original line. Now,

$$\begin{aligned} 0 &= 2 + 2y, \text{ so} \\ -2y &= 2 \\ y &= -1 \end{aligned}$$

Hence the gradient of the original line is $m_0 = 0$.
The original line is horizontal (its gradient is equal to 0), so the new line is vertical and has an equation of the form $x = c$. The point $(6, 5)$ lies on the new line, so the equation of the new line is $x = 6$.

3. To find the equation of the new line, we first need the gradient of the original line. Now,

$$\begin{aligned} -9y &= 90, \text{ so} \\ y &= -10 \end{aligned}$$

Hence the gradient of the original line is $m_0 = 0$.
The original line is horizontal (its gradient is equal to 0), so the new line is vertical and has an equation of the form $x = c$. The point $(-6, -10)$ lies on the new line, so the equation of the new line is $x = -6$.

4. To find the equation of the new line, we first need the gradient of the original line. Now,

$$\begin{aligned} 3y &= -27, \text{ so} \\ y &= -9 \end{aligned}$$

Hence the gradient of the original line is $m_0 = 0$.
The original line is horizontal (its gradient is equal to 0), so the new line is vertical and has an equation of the form $x = c$. The point $(10, -7)$ lies on the new line, so the equation of the new line is $x = 10$.

5. To find the equation of the new line, we first need the gradient of the original line. Now,

$$\begin{aligned} -20 + 5y &= 0, \text{ so} \\ 5y &= 20 \\ y &= 4 \end{aligned}$$

Hence the gradient of the original line is $m_0 = 0$.
The original line is horizontal (its gradient is equal to 0), so the new line is vertical and has an equation of the form $x = c$. The point $(10, 2)$ lies on the new line, so the equation of the new line is $x = 10$.