

Ex7 Write an equation of a line with a slope of 7 that passes through (1, -1).

$$\begin{aligned}
 & \text{PSF } y - y_1 = m(x - x_1) \\
 & y + 1 = 7(x - 1) \\
 & y + 1 = 7x - 7 \\
 & \quad \quad \quad -1 \quad \quad -1 \\
 & \hline
 & y = 7x - 8 \quad \text{SI} \\
 & \quad \quad \quad -7x \quad -7x \\
 & \quad \quad \quad -1(-7x + y) = (-8)(-1) \\
 & \quad \quad \quad 7x - y = 8
 \end{aligned}$$

Ex8 Write an equation of a line that passes through the points (-2, 13) and (1, -11).

$$\begin{aligned}
 & M = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-11 - 13}{1 - (-2)} = \frac{-24}{3} = -8 \\
 & \text{PSF } y - y_1 = m(x - x_1) \\
 & y - 13 = -8(x + 2) \\
 & y - 13 = -8x - 16 \\
 & \quad \quad \quad +13 \quad \quad +13 \\
 & \hline
 & y = -8x - 3 \quad \text{SI} \\
 & \quad \quad \quad +8x \quad +8x \\
 & \quad \quad \quad 8x + y = -3 \quad \text{SF}
 \end{aligned}$$

Ex9 Write an equation of a line that passes through the points (-4, 7) and (8, 4).

$$\begin{aligned}
 & M = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 7}{8 - (-4)} = \frac{-3}{12} = -\frac{1}{4} \\
 & \text{PSF } y - y_1 = m(x - x_1) \\
 & y - 7 = -\frac{1}{4}(x + 4) \\
 & y - 7 = -\frac{1}{4}x - 1 \\
 & \quad \quad \quad +7 \quad \quad +7 \\
 & \hline
 & y = -\frac{1}{4}x + 6 \quad \text{SI} \\
 & \quad \quad \quad +\frac{1}{4}x \quad +\frac{1}{4}x \\
 & \quad \quad \quad 4\left(\frac{1}{4}x + y\right) = (6)(4) \\
 & \quad \quad \quad x + 4y = 24 \quad \text{SF}
 \end{aligned}$$

Ex10 Write an equation of a line that passes through the points (-1, -8) and (2, 13).

$$\begin{aligned}
 & M = \frac{y_2 - y_1}{x_2 - x_1} = \frac{13 - (-8)}{2 - (-1)} = \frac{21}{3} = 7 \\
 & \text{PSF } y - y_1 = m(x - x_1) \\
 & y + 8 = 7(x + 1) \\
 & y + 8 = 7x + 7 \\
 & \quad \quad \quad -8 \quad \quad -8 \\
 & \hline
 & y = 7x - 1 \quad \text{SI} \\
 & \quad \quad \quad -7x \quad -7x \\
 & \quad \quad \quad -1(-7x + y) = (-1)(-1) \\
 & \quad \quad \quad 7x - y = 1 \quad \text{SF}
 \end{aligned}$$