Gradient between 2 points

\[
\text{gradient} = \frac{\text{rise}}{\text{run}} \quad m = \frac{y_2 - y_1}{x_2 - x_1}
\]

\[(x_1, y_1) \quad (x_2, y_2) \quad \rightarrow \quad \text{gradient} = \frac{y_2 - y_1}{x_2 - x_1},\]

Rearrangements:

\[
\text{gradient} = \frac{\text{rise}}{\text{run}}
\]

\[
\text{rise} = \text{run} \times \text{gradient}
\]

\[
\text{run} = \frac{\text{rise}}{\text{gradient}}
\]

c.g. find the gradient of the line that lies on these two points, (3, 7) and (10, 2)

\[
m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - 7}{10 - 3} = \frac{-5}{7}
\]

c.g. find the gradient of the line that lies on these two points, (-4, 7) and (1, 3)

\[
m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - 7}{1 - (-4)} = \frac{-4}{5}
\]