

Gradient

Practice worksheet

The distance gradient (slope) of line segment joining two points (x_1, y_1) and (x_2, y_2) is $m = \frac{y_2 - y_1}{x_2 - x_1}$

Plot the points in the coordinates plane and calculate the gradient (slope) of the following pairs of points in a 2D coordinate plane

1. **A(2, 3) and B(5, 7).**

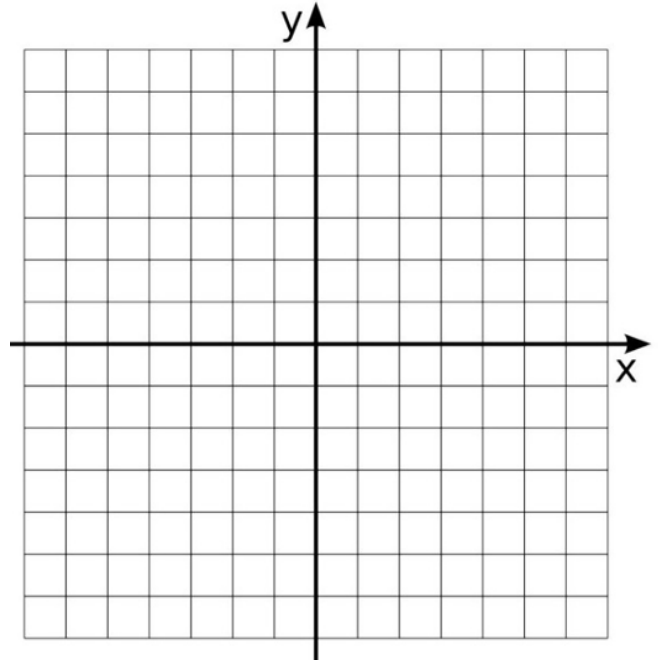
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



2. **P(-1, 4) and Q(3, 1).**

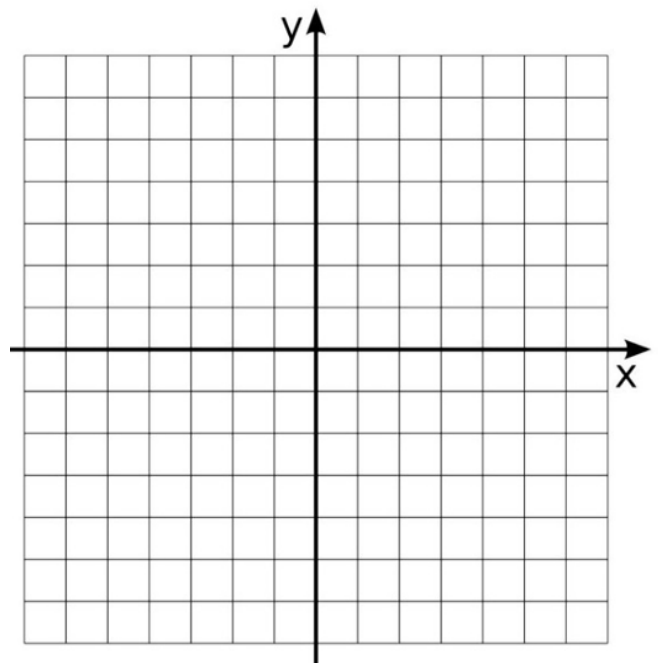
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



3. **X(0, 0) and Y(6, 9).**

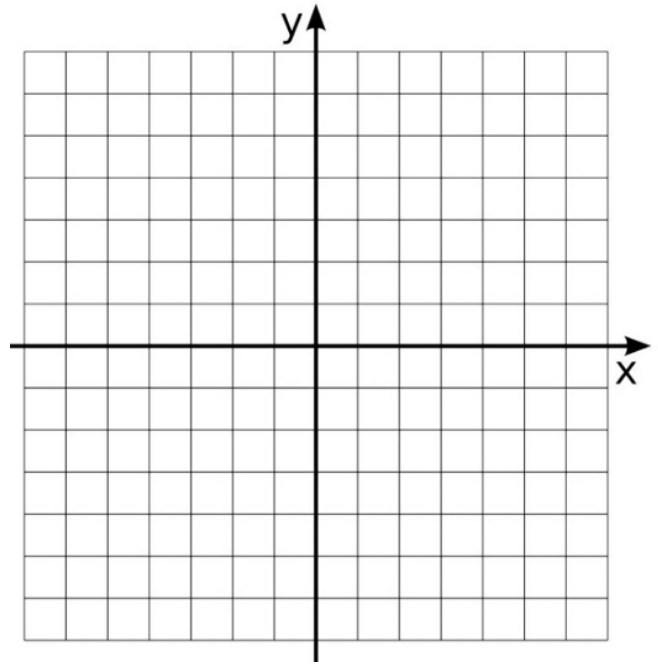
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



4. **M(4, 2) and N(4, 6).**

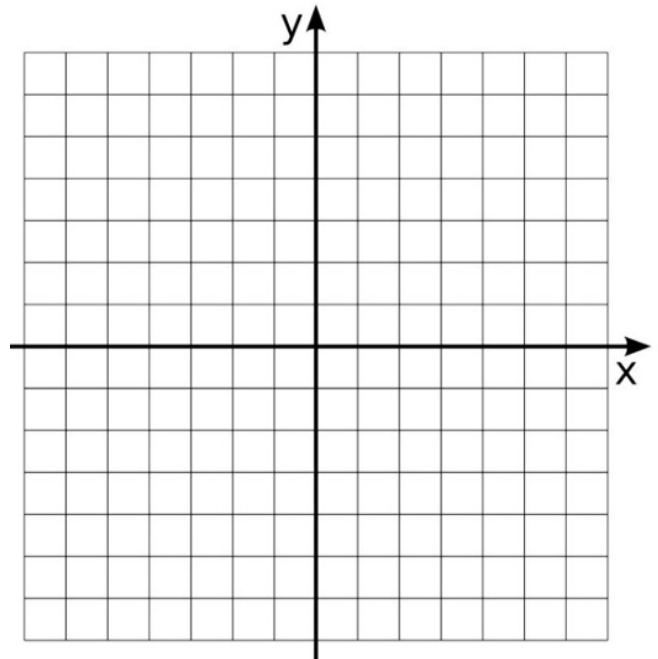
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



5. **R(2, 0) and S(-1, -6).**

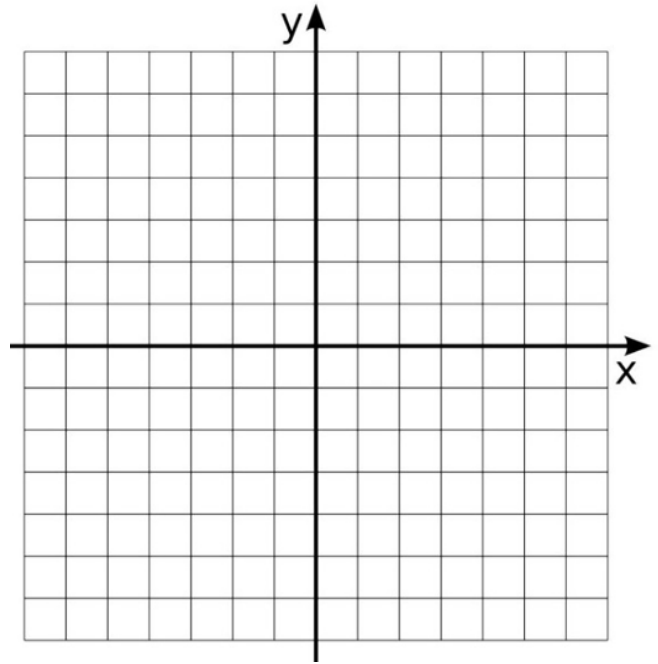
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



6. **U(-2, 5) and V(3, 1).**

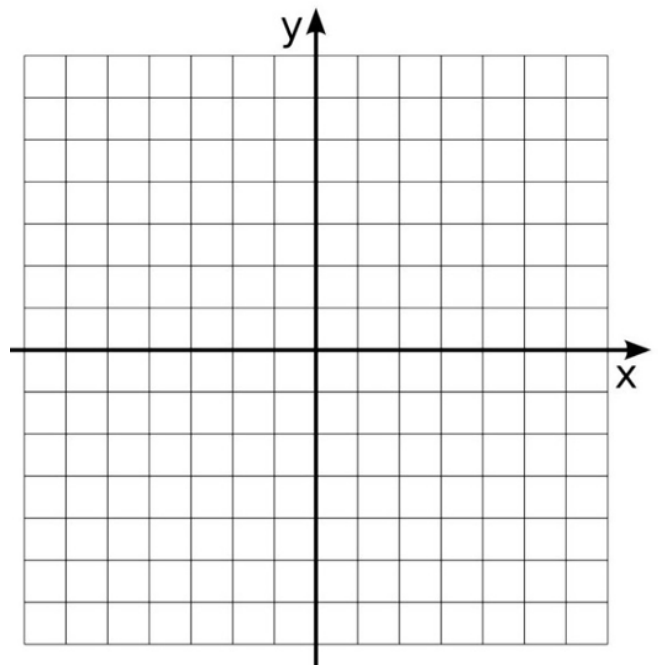
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



7. L (- 4, 3) and T (- 4, -5).

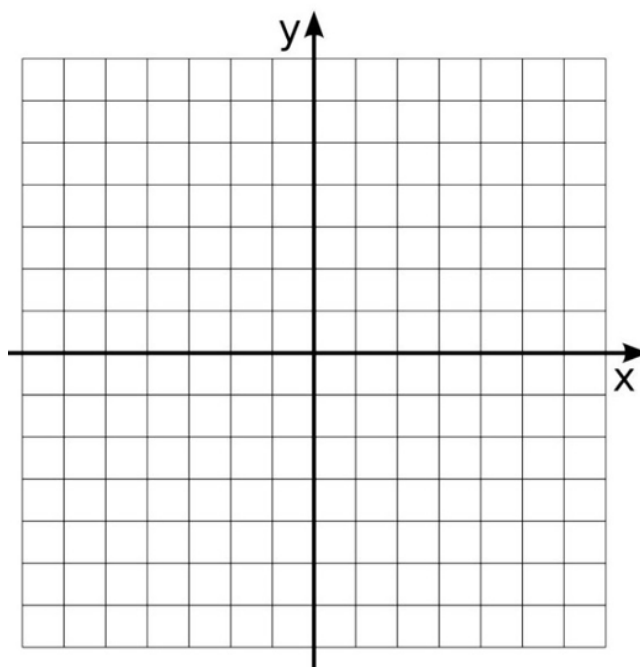
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



8. H(3, 6) and G(6, 6).

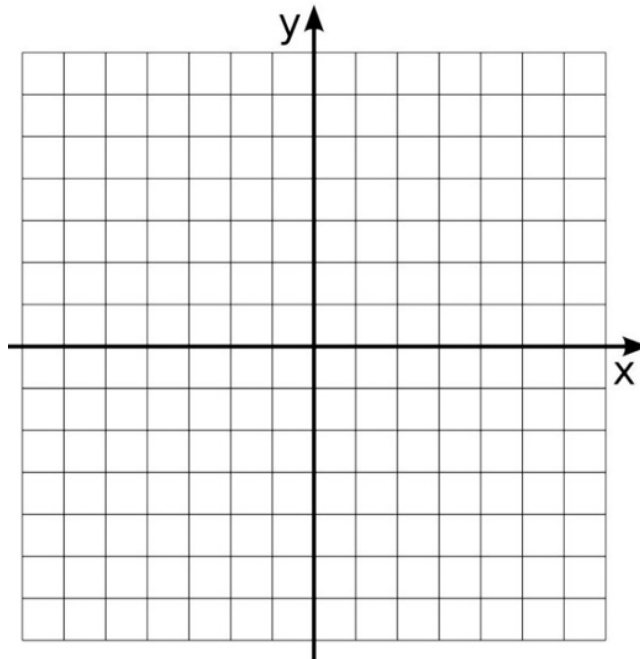
$$y_2 - y_1 = \underline{\hspace{2cm}}$$

$$x_2 - x_1 = \underline{\hspace{2cm}}$$

$$\text{Gradient } m = \underline{\hspace{2cm}}$$

Slopping : (upward / downward)

St line Type : (Horizontal / Vertical / Oblique)



Answer Key:

$$1 \quad m = \frac{4}{3}$$

$$2 \quad m = -\frac{3}{4}$$

$$3 \quad m = \frac{3}{2}$$

$$4 \quad m = \text{Undefined (Vertical Line)}$$

$$5 \quad m = \frac{-6}{3} = -2$$

$$6 \quad m = \frac{1-5}{3-(-2)} = \frac{-4}{5}$$

$$7 \quad m = \text{Undefined (Vertical Line)}$$

$$8 \quad m = 0$$
