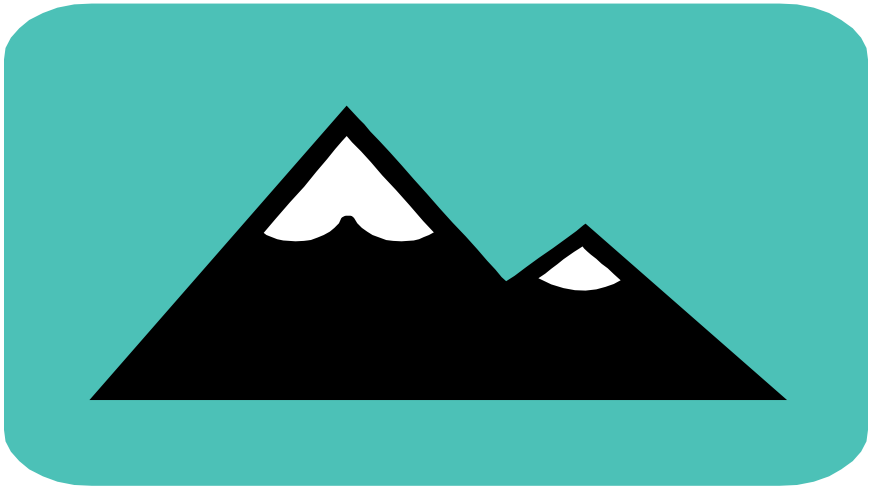
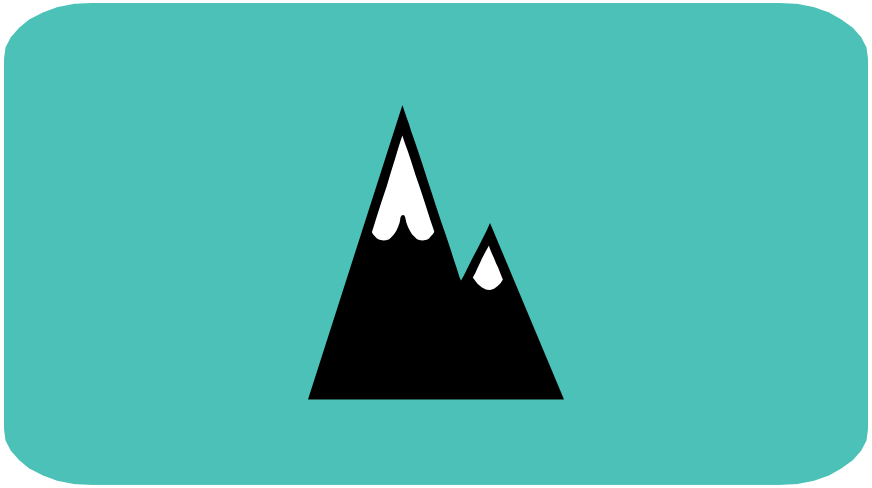
4.2

Slope of a Line

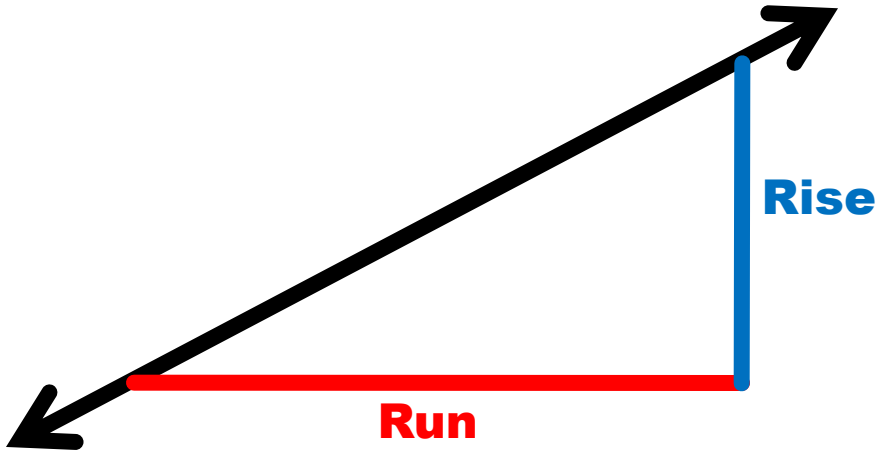
SLOPE

This is the measure of steepness



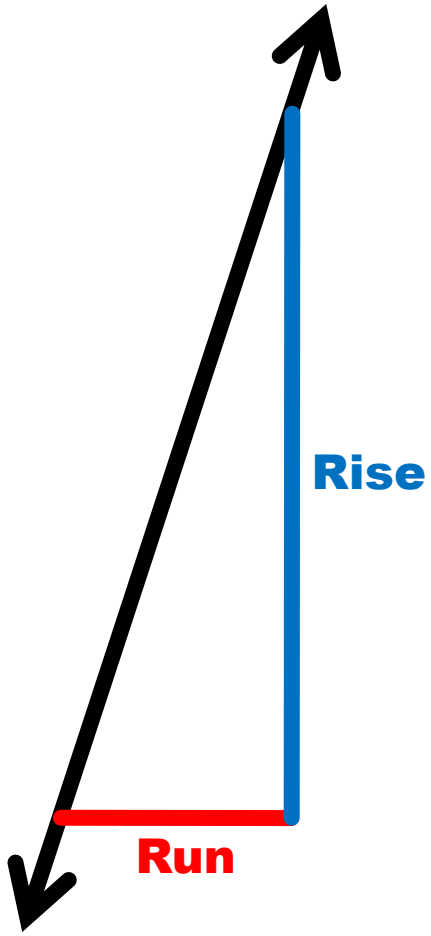


SLOPE OF A LINE



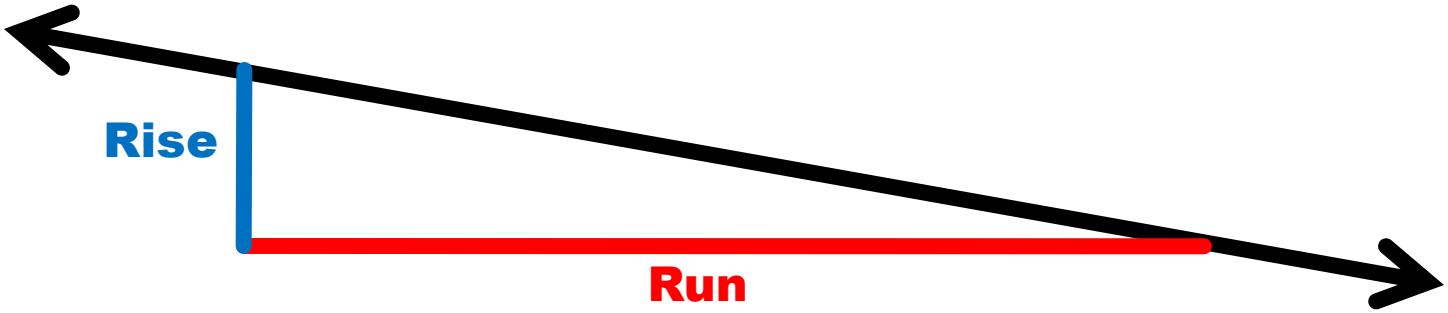
$$slope = \frac{rise}{run}$$

SLOPE OF A LINE



$$slope = \frac{rise}{run}$$

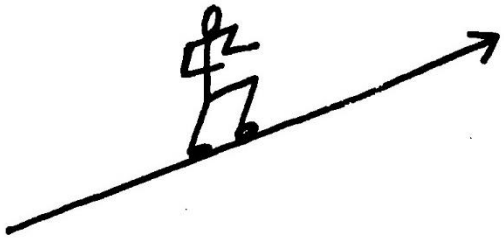
SLOPE OF A LINE



$$slope = \frac{rise}{run}$$

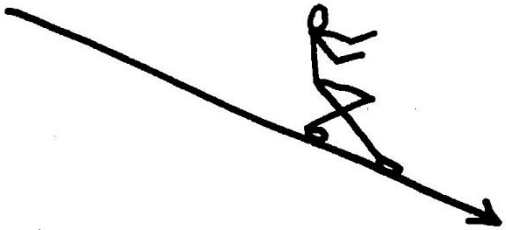
SLOPE OF A LINE

going up



positive slope

going down

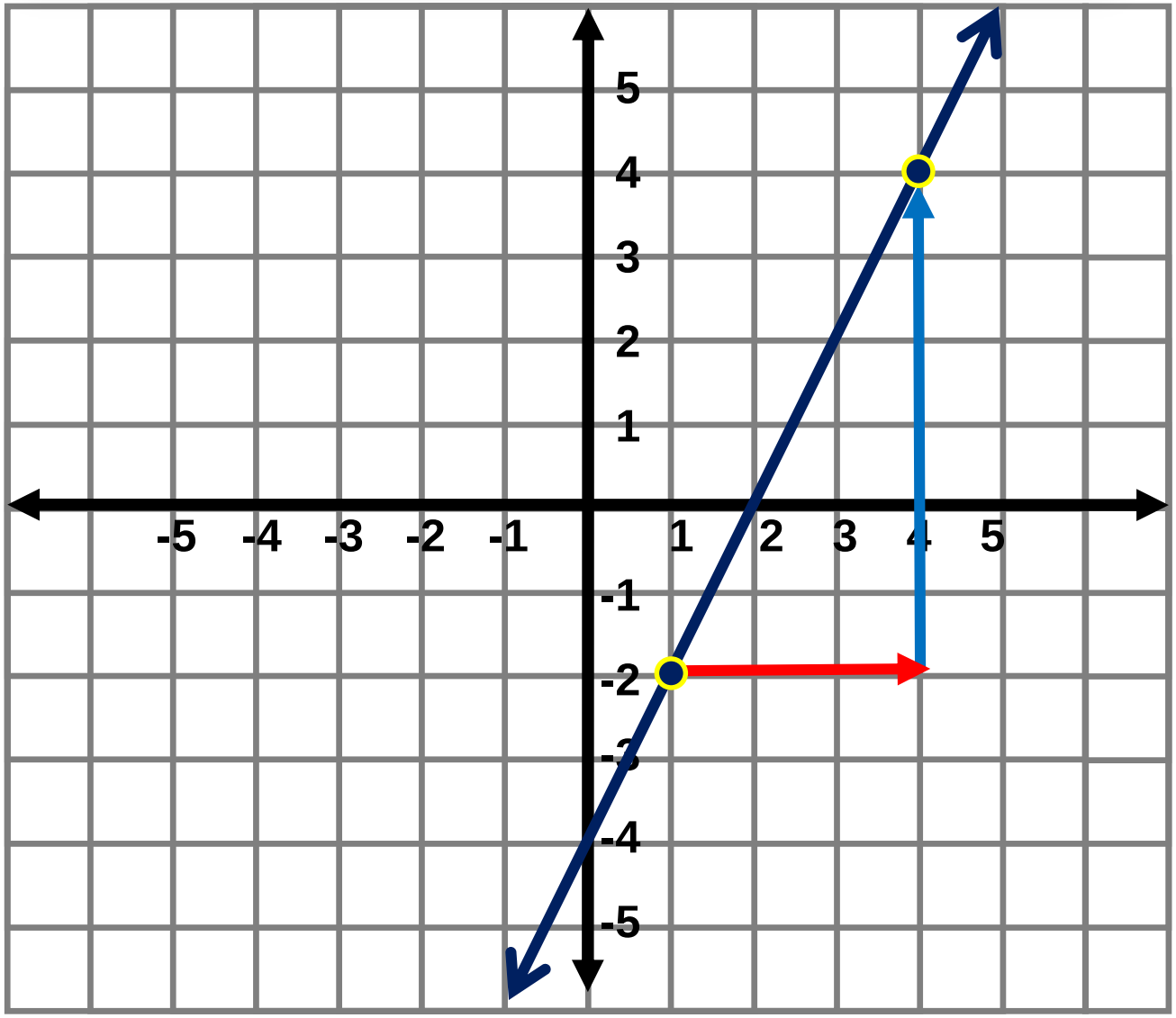


negative slope

level

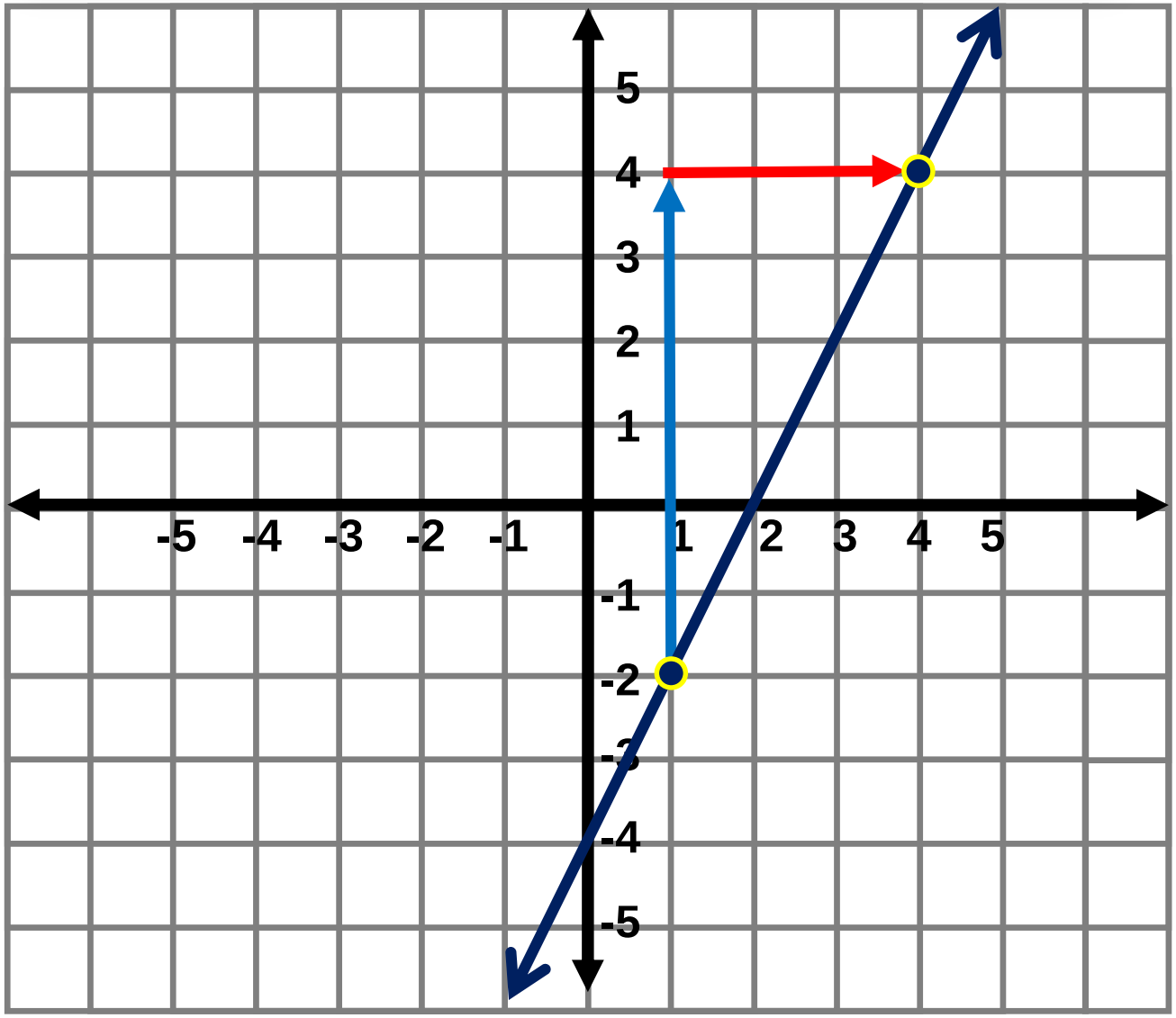
0 slope

SLOPE OF A LINE



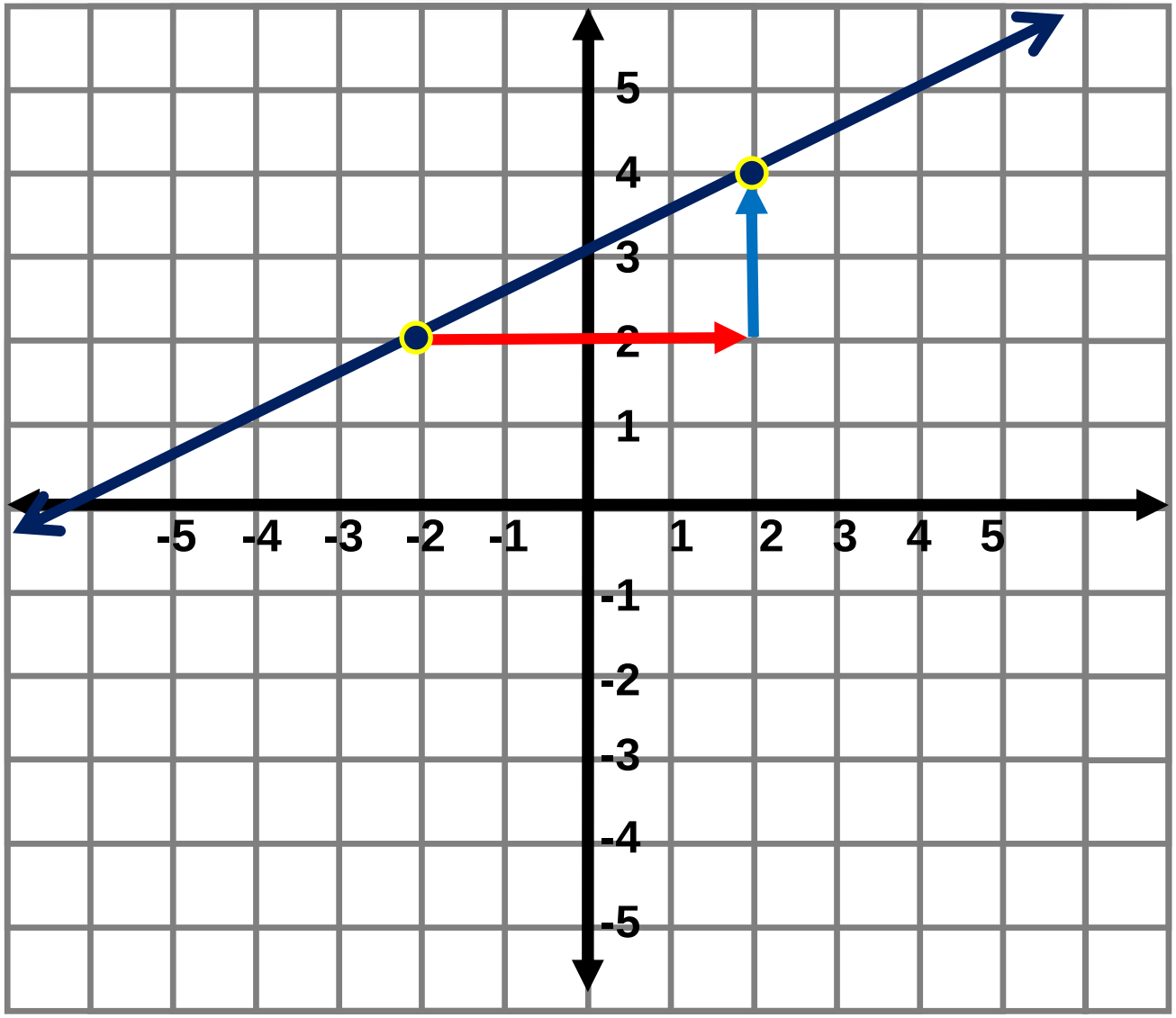
$$slope = \frac{rise}{run}$$

SLOPE OF A LINE



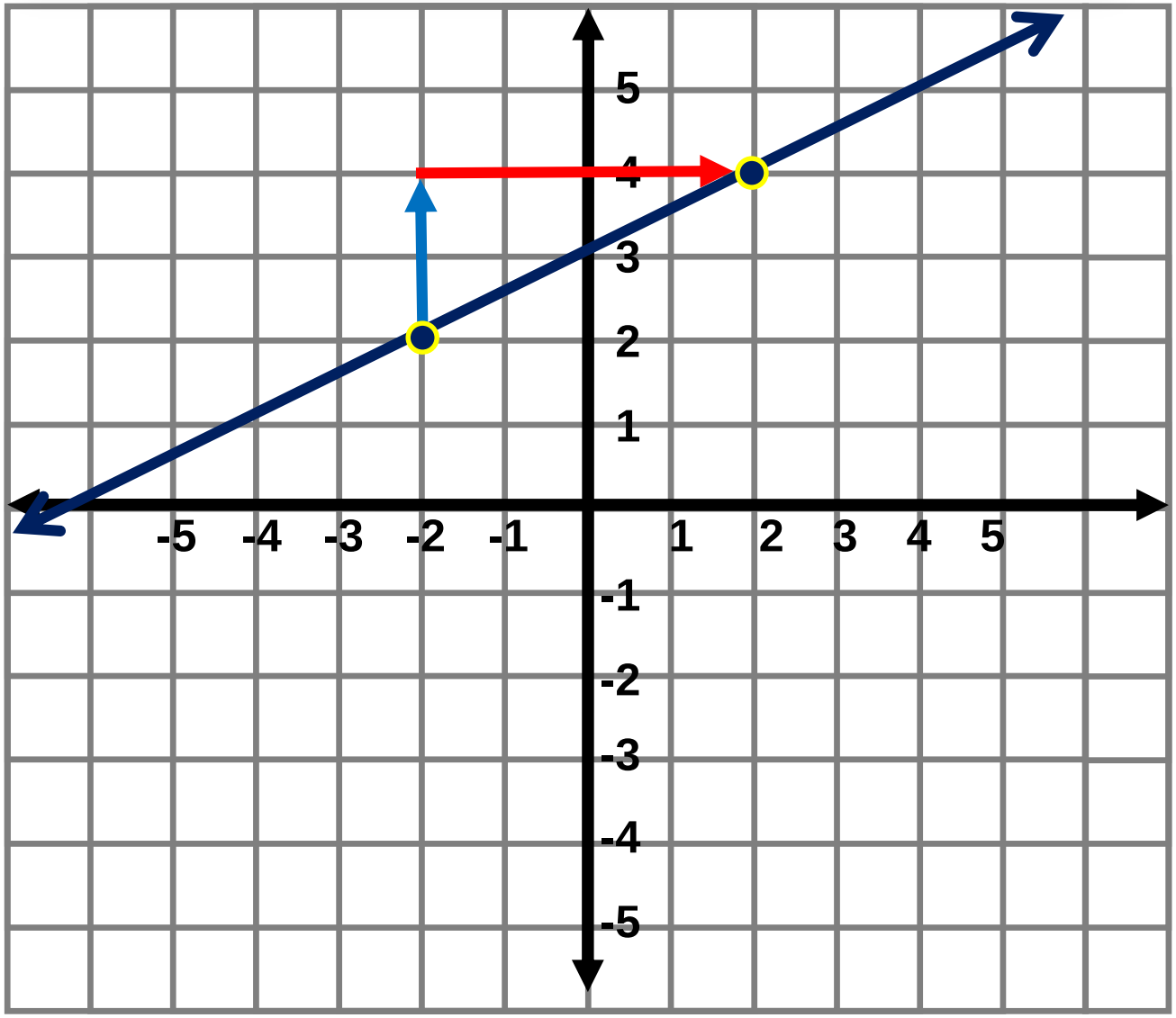
$$slope = \frac{rise}{run}$$

SLOPE OF A LINE



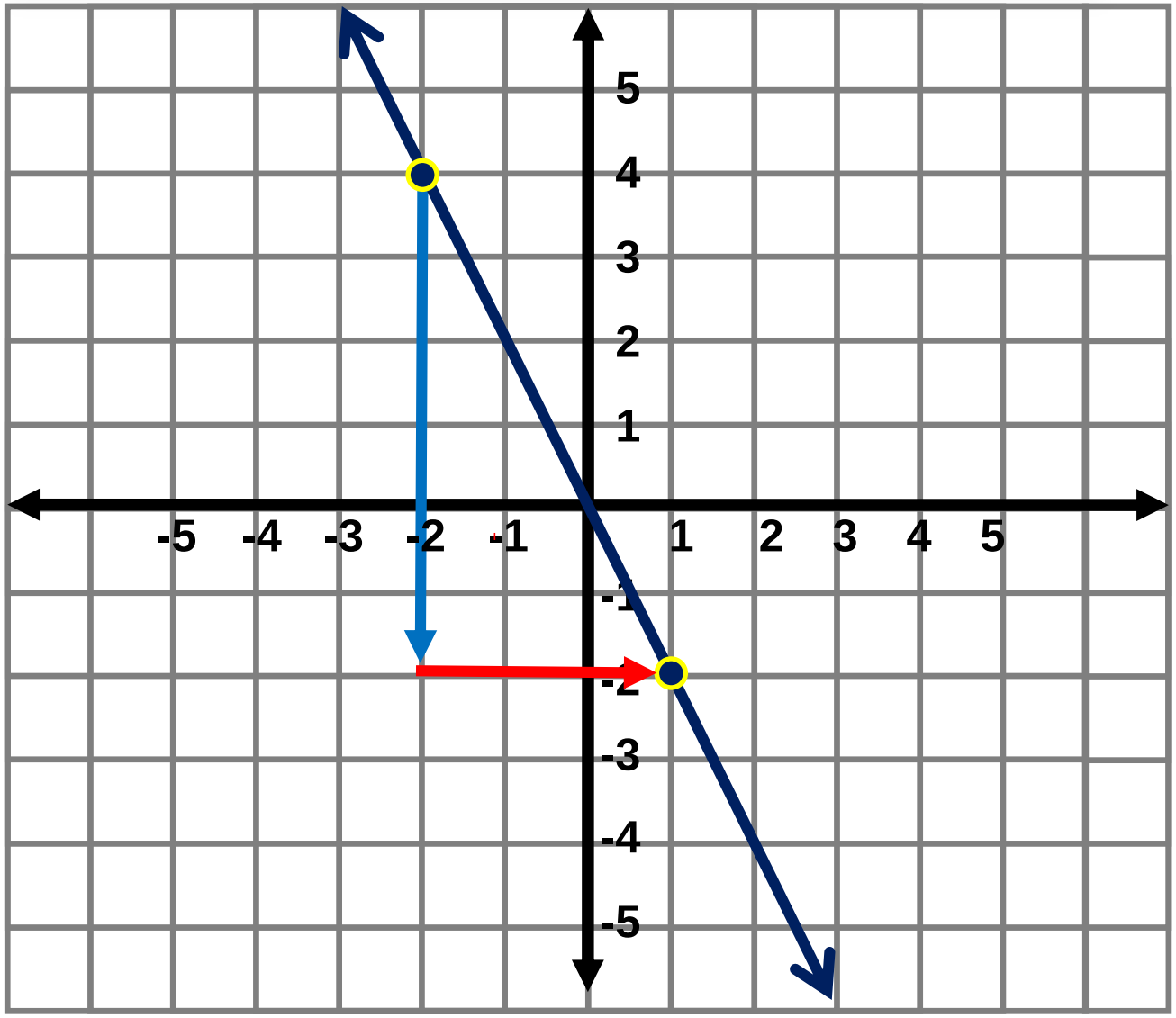
$$slope = \frac{rise}{run}$$

SLOPE OF A LINE



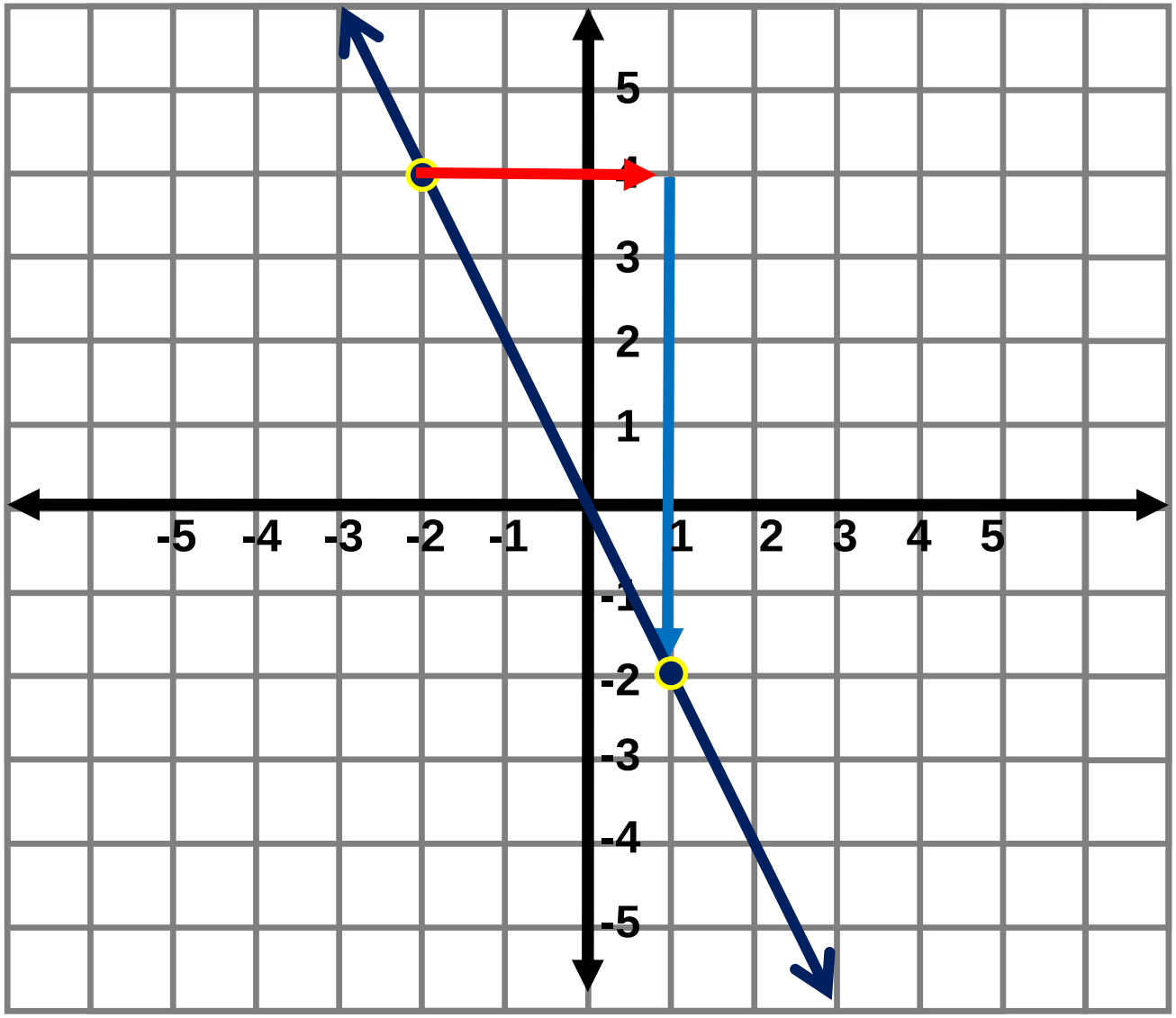
$$slope = \frac{rise}{run}$$

SLOPE OF A LINE



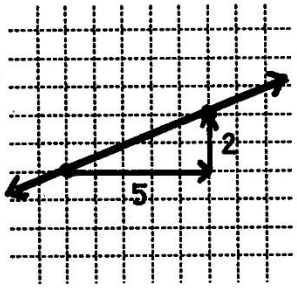
$$slope = \frac{rise}{run}$$

SLOPE OF A LINE

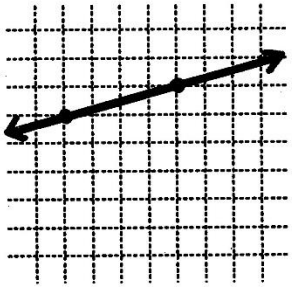


$$slope = \frac{rise}{run}$$

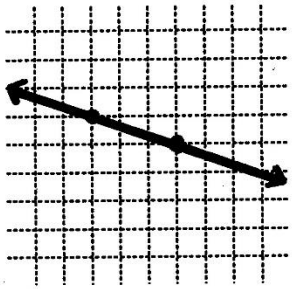
Find the slope of each line. Simplify the slope or write it as an integer if you can.



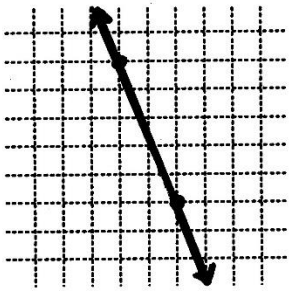
_____



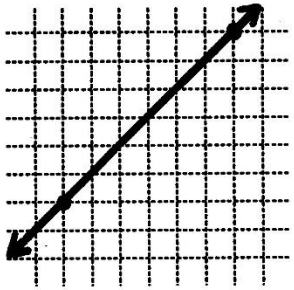
_____



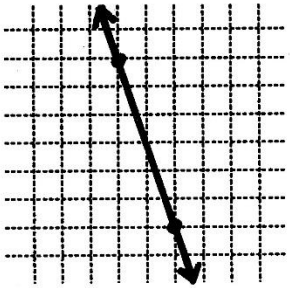
_____



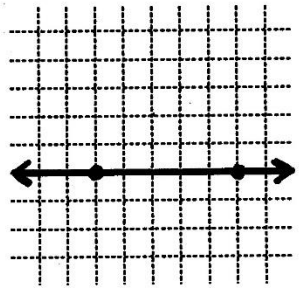
_____



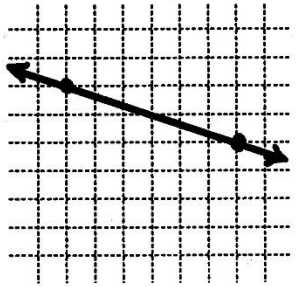
_____



_____

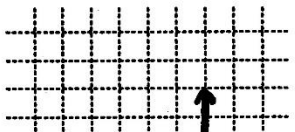


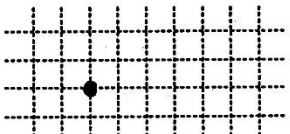
_____

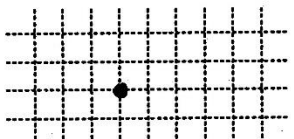


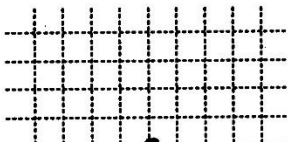
_____

Through each point draw a line that has the slope shown below the grid. Use a ruler.

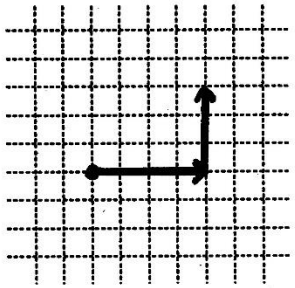




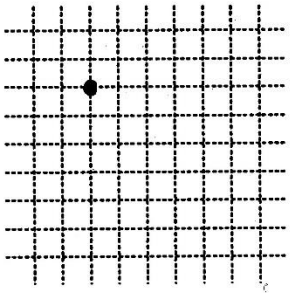




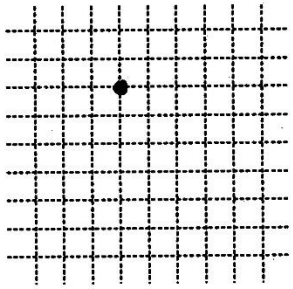
Through each point draw a line that has the slope shown below the grid. Use a ruler.



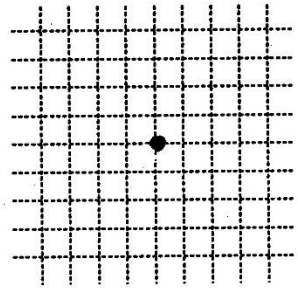
$\frac{3}{4}$



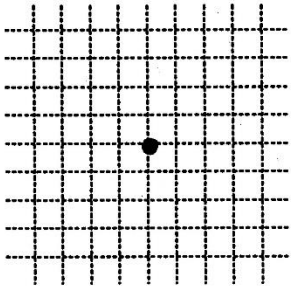
$\frac{-3}{4}$



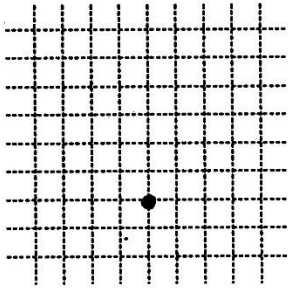
$\frac{-3}{2}$



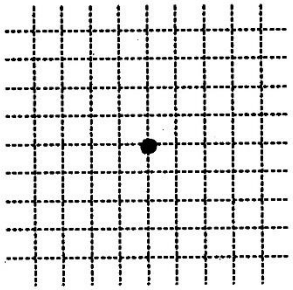
$\frac{3}{2}$



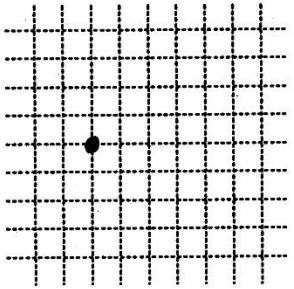
4° (4 equals $\frac{4}{1}$.)



$\frac{1}{3}$



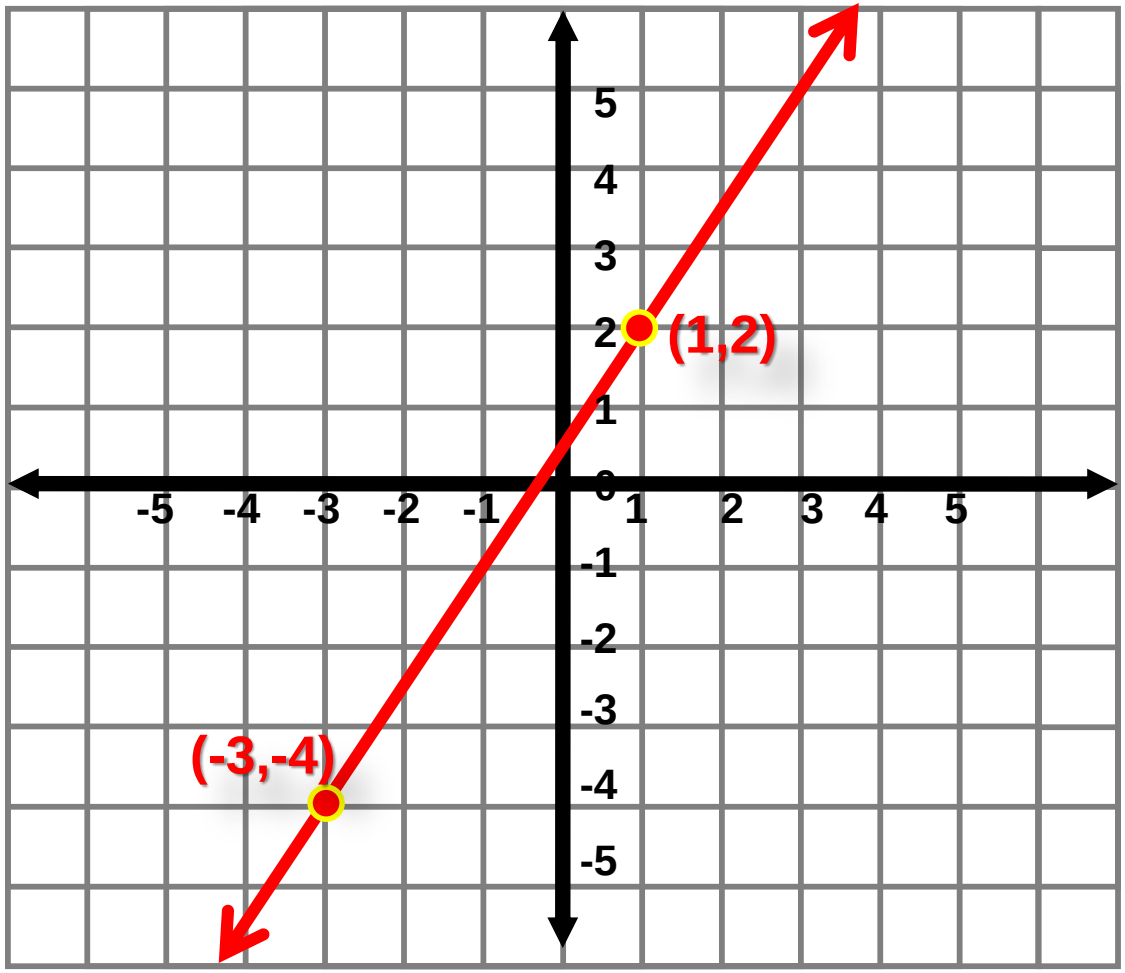
-2



$\frac{1}{2}$

SLOPE FORMULA

(-3, -4) and (1,2)



SLOPE FORMULA

(-3, -4) and (1,2)

(x_1, y_1) (x_2, y_2)

If you do not have the graph of a line use…

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

SLOPE FORMULA

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope between the two points:

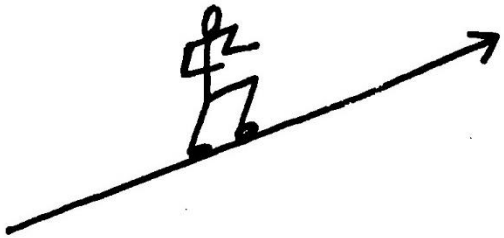
1) $(7, -6)$ ***and*** $(-5, 2)$

2) $(-2, 3)$ ***and*** $(4, 8)$

3) $(6, 3)$ ***and*** $(2, 0)$

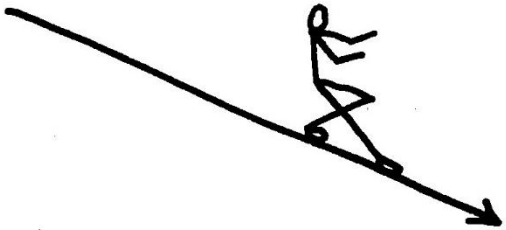
SLOPE OF A LINE

going up



positive slope

going down



negative slope

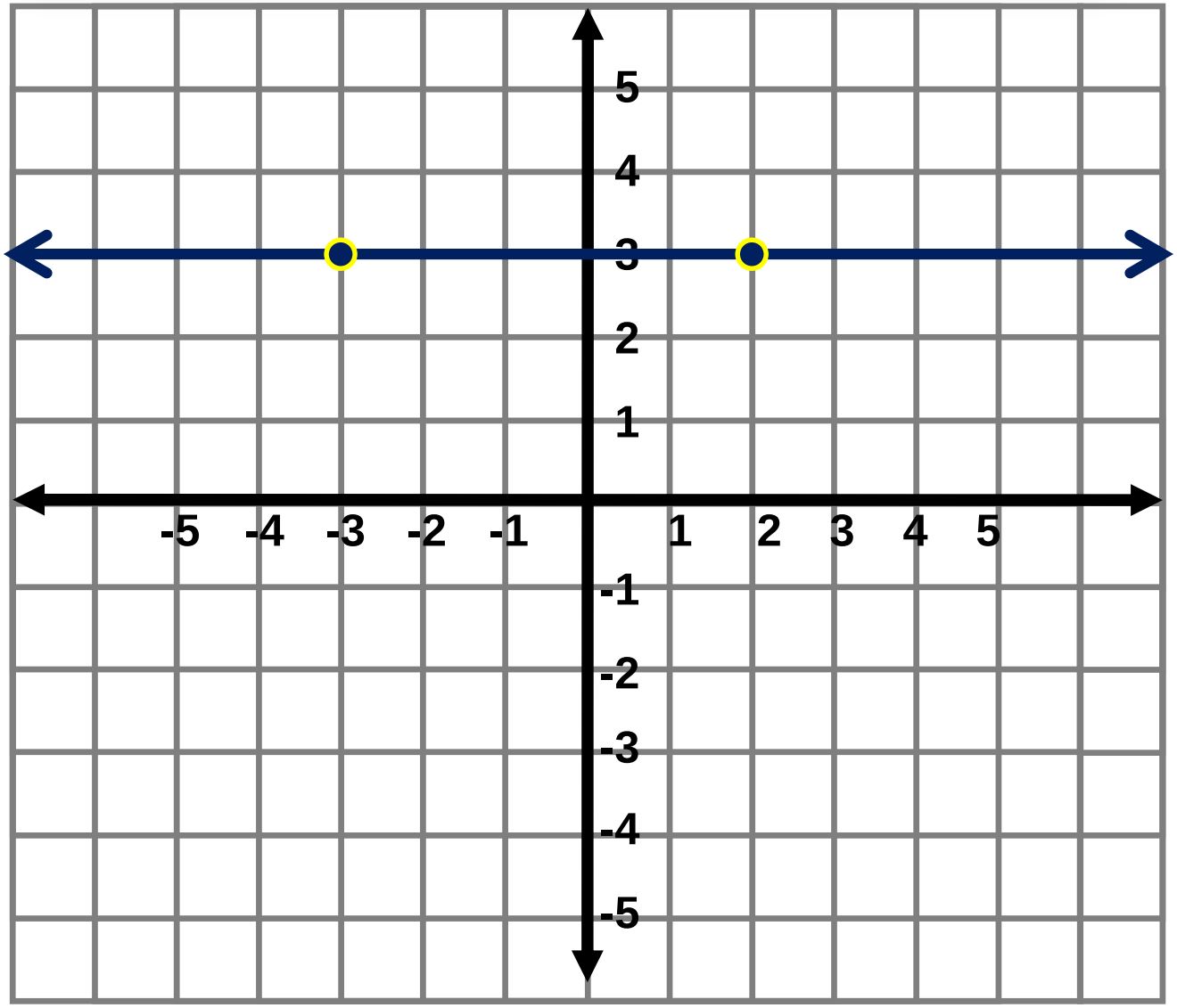
level

0 slope

Zero Slope vs Undefined (No Slope)

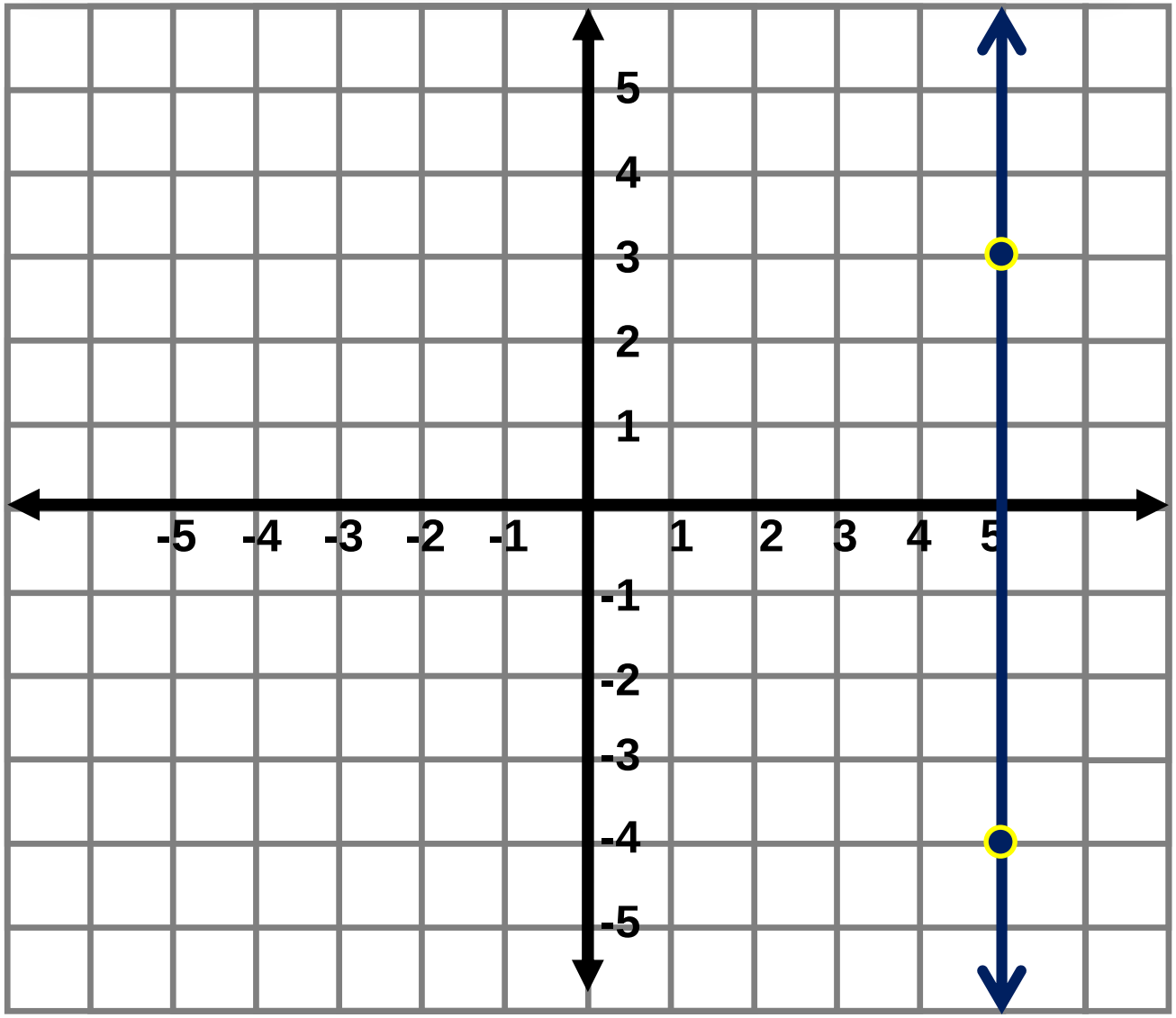
$$\frac{0}{5} \qquad \frac{5}{0}$$

SLOPE OF A LINE



$$slope = \frac{rise}{run}$$

SLOPE OF A LINE



$$slope = \frac{rise}{run}$$

SLOPE FORMULA

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope between the two points:

1) $(0, 7)$ ***and*** $(-4, -1)$

2) $(-2, 5)$ ***and*** $(9, 5)$

SLOPE FORMULA

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope between the two points:

3) $(11, -8)$ ***and*** $(3, 4)$

4) $(-3, 9)$ ***and*** $(-3, 5)$

Solving Proportions

Solve for the missing variable.

1) $\frac{1}{5} = \frac{x}{20}$

2) $\frac{8}{6} = \frac{x}{9}$

Solving Proportions

Solve for the missing variable.

3) $\frac{6r}{10} = \frac{12}{5}$

Solving Proportions

Solve for the missing variable.

4) $\frac{3+c}{12} = \frac{5}{6}$

Review

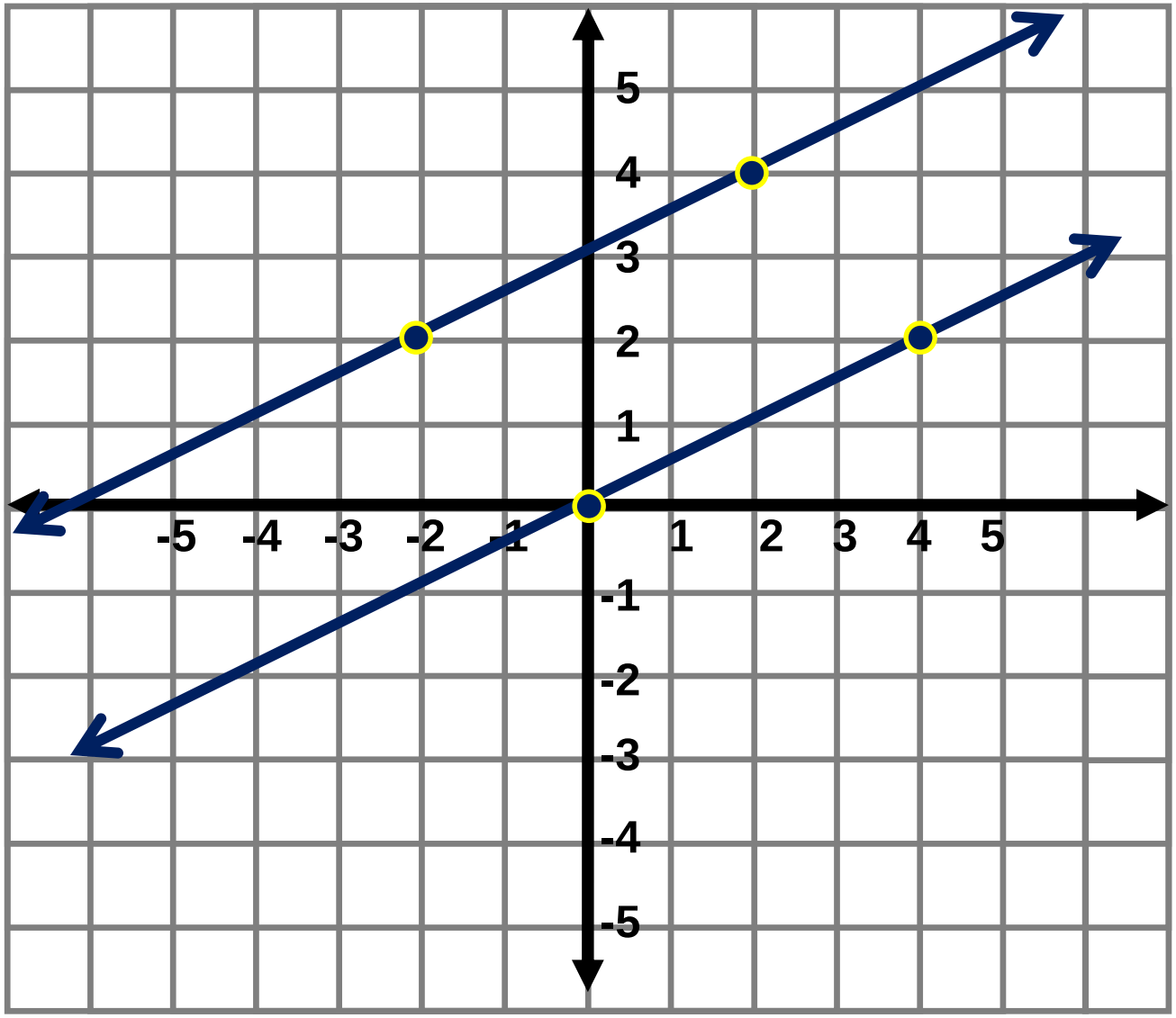
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

4) (1, 3) and (3, −2)

5) (−3, 4) and (4, 1)

6) (1, −3) and (7, 3)

SLOPE OF PARALLEL LINES



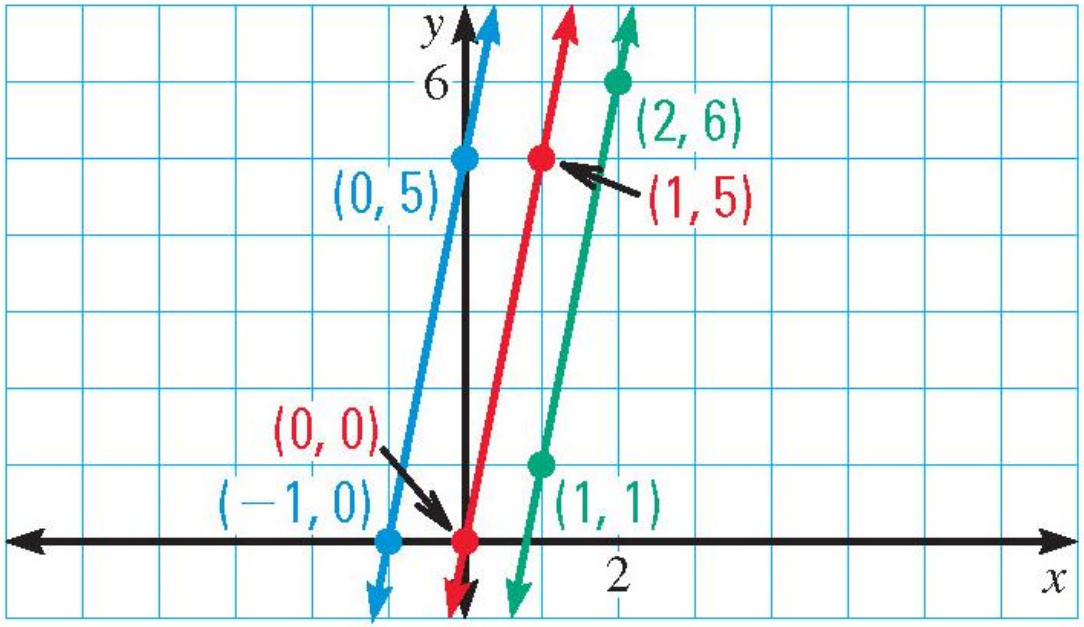
$$slope = \frac{rise}{run}$$

Practice

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Determine which lines are parallel.

13) .

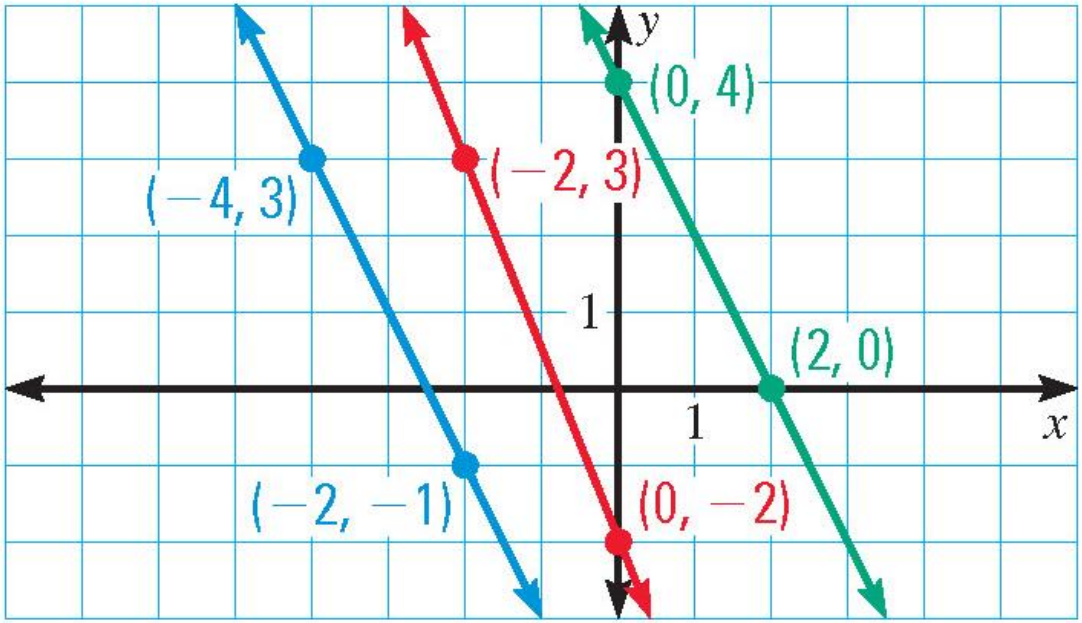


Practice

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Determine which lines are parallel.

12)



FINDING MISSING NUMBERS

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the value of k so that the line passes on the following point with the given slope.

16) $(2,3)$ ***and*** $(k,9)$ **;** **slope** $= \frac{3}{2}$