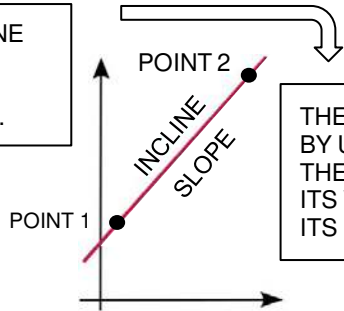


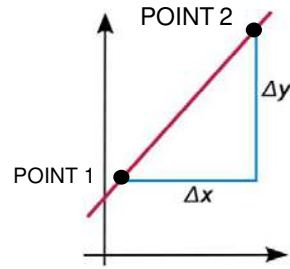
# FINDING THE SLOPE FROM TWO POINTS

# ANSWERS

THE SLOPE OF A LINE DESCRIBES HOW STEEP IT IS OR THE SLANT OF THE LINE.



THE SLOPE CAN BE FOUND BY USING TWO POINTS ON THE LINE TO DETERMINE ITS VERTICAL CHANGE AND ITS HORIZONTAL CHANGE.



IN MATH WE CALL THIS THE **RISE** AND **RUN**. THE **RISE** IS THE DIFFERENCE OF THE Y-COORDINATES ( $\Delta y$ ) AND THE **RUN** IS THE DIFFERENCE OF THE X-COORDINATES ( $\Delta x$ ).

THE SLOPE CAN BE FOUND BY USING THE RATIO, RISE-OVER-RUN. IN OTHER WORDS, YOU FIND ITS VERTICAL CHANGE ( $\Delta y$ ) AND ITS HORIZONTAL CHANGE ( $\Delta x$ ), AND THEN MAKE A FRACTION WITH THE  $\Delta y$  ON TOP OF THE  $\Delta x$ . CHECK OUT THE EXAMPLE BELOW.

TWO POINTS ON A LINE.

$(6, 4), (1, 2)$

TO FIND THE SLOPE CALCULATE THE DIFFERENCE BETWEEN THE TWO X AND Y COORDINATES.

$$\begin{array}{r} (x, y) \\ (6, 4) \\ - (1, 2) \\ \hline 5, 2 \end{array}$$

$\Delta x$                        $\Delta y$

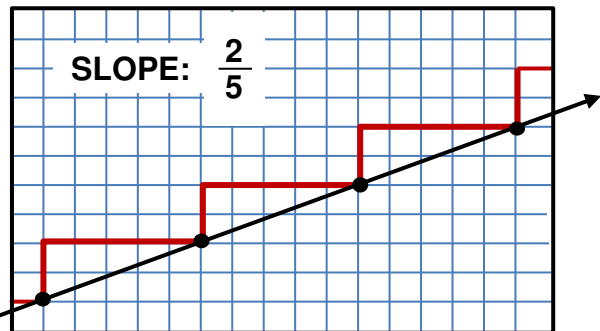
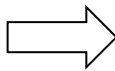
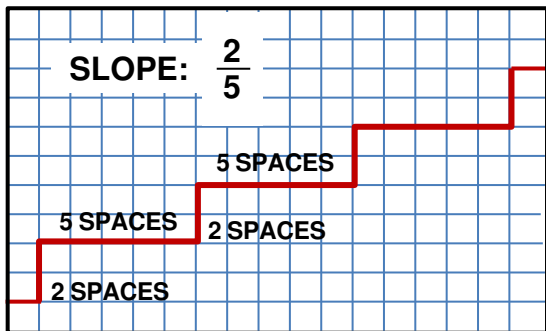
THE EASIEST WAY TO ACCOMPLISH THIS IS TO RE-WRITE THE POINTS ON TOP OF EACH OTHER AND SUBTRACT.

SLOPE

$$\frac{\Delta y}{\Delta x} = \frac{2}{5}$$

SLOPE

THIS TELLS US THAT EVERY TIME WE GO UP 2 SPACES WE NEED TO GO ACROSS 5 SPACES. THINK OF IT LIKE STAIRS.



NOW YOUR TURN. USE THE POINTS FROM EACH LINE TO DETERMINE ITS SLOPE.

1.  $(8, 1), (3, 0)$

$$\frac{1}{5} \quad \begin{array}{r} (8, 1) \\ - (3, 0) \\ \hline 5, 1 \end{array}$$

2.  $(4, 9), (2, 2)$

$$\frac{7}{2} \quad \begin{array}{r} (4, 9) \\ - (2, 2) \\ \hline 2, 7 \end{array}$$

3.  $(7, 19), (4, 8)$

$$\frac{11}{3} \quad \begin{array}{r} (7, 19) \\ - (4, 8) \\ \hline 3, 11 \end{array}$$

4.  $(14, 5), (13, 4)$

$$\frac{1}{1} = 1 \quad \begin{array}{r} (14, 5) \\ - (13, 4) \\ \hline 1, 1 \end{array}$$

5.  $(5, 11), (2, 6)$

$$\frac{5}{3} \quad \begin{array}{r} (5, 11) \\ - (2, 6) \\ \hline 3, 5 \end{array}$$

6.  $(19, 16), (10, 12)$

$$\frac{4}{9} \quad \begin{array}{r} (19, 16) \\ - (10, 12) \\ \hline 9, 4 \end{array}$$