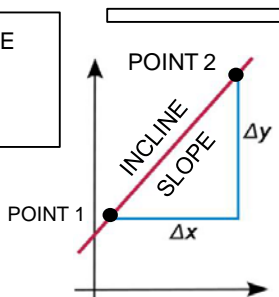


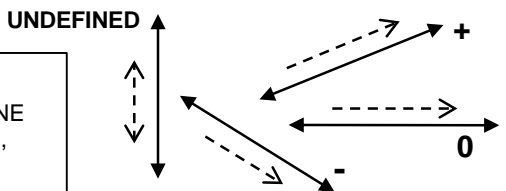
FINDING THE SLOPE FROM TWO POINTS

ANSWERS

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



THEIR ARE FOUR TYPES OF SLOPES. THE SLOPE OF A LINE CAN BE POSITIVE, NEGATIVE, ZERO, OR UNDEFINED.



WE ALWAYS VIEW A SLOPE FROM LEFT TO RIGHT. IT'S LIKE READING A BOOK.

LINES THAT HAVE POSITIVE SLOPES, SLANT UP FROM LEFT TO RIGHT. IF YOU WERE ON A BIKE YOU WOULD HAVE TO RIDE UP THE POSITIVE HILL.

LINES THAT HAVE NEGATIVE SLOPES, SLANT DOWN FROM LEFT TO RIGHT. IF YOU WERE ON A BIKE YOU WOULD GET TO RIDE DOWN THE NEGATIVE HILL.

LINES THAT ARE HORIZONTAL HAVE A SLOPE OF ZERO. IF YOU WERE ON A BIKE YOU WOULD NOT HAVE TO GO UP OR GET TO RIDE DOWN THE HILL, SO YOUR RIDE IS ZERO.

LINES THAT ARE VERTICAL HAVE AN UNDEFINED SLOPE. IT WOULD BE ALMOST IMPOSSIBLE TO RIDE DOWN THIS HILL AND MOST LIKELY YOU WOULD BE HURT.

THE SLOPE CAN BE FOUND BY USING TWO POINTS ON A LINE.

HELPFUL EXAMPLE

TWO POINTS ON A LINE.

(3, 4), (7, 1)

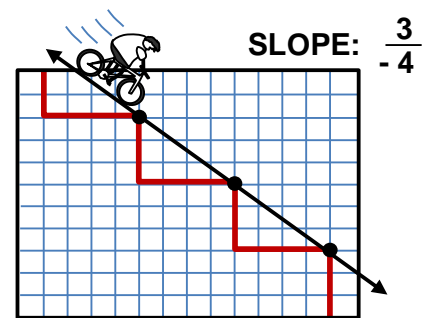
RE-WRITE THE POINTS ON TOP OF EACH OTHER AND FIND THE DIFFERENCE BETWEEN THE TWO X AND Y COORDINATES.

$$\begin{array}{r}
 (x, y) \\
 (3, 4) \\
 - (7, 1) \\
 \hline
 -4, 3 \\
 \begin{array}{cc}
 \swarrow & \searrow \\
 \Delta x & \Delta y
 \end{array}
 \end{array}$$

SLOPE

$$\frac{\Delta y}{\Delta x} = \frac{3}{-4}$$

SLOPE



THIS TELLS US THAT EVERY TIME WE GO UP 3 SPACES WE NEED TO GO TO THE LEFT 4 SPACES. IT IS A NEGATIVE SLOPE.

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

1. (4, 3), (9, 2)

$$\frac{1}{-5} \quad \begin{array}{r} (4, 3) \\ - (9, 2) \\ \hline -5, 1 \end{array}$$

2. (7, 2), (4, 11)

$$\frac{-9}{3} \quad \begin{array}{r} (7, 2) \\ - (4, 11) \\ \hline 3, -9 \end{array}$$

3. (18, 5), (14, 1)

$$\frac{4}{4} = 1 \quad \begin{array}{r} (18, 5) \\ - (14, 1) \\ \hline 4, 4 \end{array}$$

4. (8, 6), (6, 13)

$$\frac{-7}{2} \quad \begin{array}{r} (8, 6) \\ - (6, 13) \\ \hline 2, -7 \end{array}$$

5. (17, 13), (12, 10)

$$\frac{3}{5} \quad \begin{array}{r} (17, 13) \\ - (12, 10) \\ \hline 5, 3 \end{array}$$

6. (14, 15), (22, 9)

$$\frac{6}{-8} \quad \begin{array}{r} (14, 15) \\ - (22, 9) \\ \hline -8, 6 \end{array}$$