

Slope Of A Line Through Two Points:

- A. To find the slope of a line through 2 points, (x_0, y_0) and (x_1, y_1) , use the following formula:

$$\frac{y_1 - y_0}{x_1 - x_0}$$

- B. Notice, it does not matter if you subtract $y_1 - y_0$ or $y_0 - y_1$ as long as you are consistent with the x-values also. In other words, if you subtract $y_0 - y_1$ you should subtract $x_0 - x_1$.

C. Examples

Ex [1] Find the slope of the line passing through the points $(6, -1)$ and $(4, 5)$.

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- First, subtract the y-values: $5 - (-1) = 6$.
- Subtract the x-values: $4 - 6 = -2$.
- The answer is $-\frac{6}{2} = -3$.

Ex [2] Find the slope of the lines passing through the points $(1, 1)$ and $(-2, 3)$.

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- First, subtract the y-values: $1 - 3 = -2$.
- Subtract the x-values: $1 - (-2) = 3$.
- The answer is $-\frac{2}{3}$.

- D. Sometimes the question might ask for the perpendicular slope of a line passing through the two points. In this case, simply find the *negative reciprocal*. So for Ex [1] the perpendicular slope would be $\frac{1}{3}$ and for Ex [2] the perpendicular slope would be $\frac{3}{2}$.