

*** Creation of Linear Functions from Slope and Y Intercept ***
Euclidean Geometry states that Two Points determine a Line
therefore given two points in a Rectangular Coordinate System
a Linear Function can be created with one specific equation.

The **Standard Form** for a Linear Function is: $Ax + By = C$

The **Slope Intercept Form** for a Linear Function is: $y = mx + b$

The **Slope**, which is defined as the **Rise / Run**, can be determined by
the difference of the Y values **over** the difference of the X values.
Given two points (ordered pairs) in a Rectangular Coordinate System.
Therefore **Slope** is defined as follows: $m = (Y_2 - Y_1) / (X_2 - X_1)$

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Given: Slope = $-2/3$ & $P_1 = (0, -2)$ Determine equation of a Linear Function

Substitute the Slope and the Y intercept into the Slope Intercept Form.

After all calculations are finished change into Standard Form.

$$y = (-2/3)x - 2 \quad +3y = -2x - 2 \quad +2x + 3y = -2$$

Therefore the Linear Function for the given two points: $+2x + 3y = -2$

Verify by calculating **and** checking the X and Y intercepts then compare to **Given!**

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Given: Slope = $+2/5$ and $P_1 = (0, +3)$ Determine equation of a Linear Function

Substitute the Slope and the Y intercept into the Slope Intercept Form.

After all calculations are finished change into Standard Form.

$$y = (+2/5)x + 3 \quad +5y = +2x + 3 \quad -2x + 5y = +3$$

Therefore the Linear Function for the given two points: $-2x + 5y = +3$

Verify by calculating **and** checking the X and Y intercepts then compare to **Given!**

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