*** Creation of Linear Functions from Two Given Points ***
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: $Ax + By = C$
Point Slope Form for a Linear Function is: $y - y_1 = m(x - x_1)$

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: $\mathbf{m = (Y_2 - Y_1) / (X_2 - X_1)}$

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Given: $P_2 = (-3, +1)$ & $P_1 = (+2, -3)$ **Determine equation of a Linear Function**
Slope as defined as Rise / Run: $m = (+1 - -3) / (-3 - +2) = (+4) / (-5) = -4/5$

Using Slope Relation again: $(Y_2 - Y_1) = m (X_2 - X_1)$ and either of the points.
$(Y_2 - -3) = (-4/5) (X_2 - +2)$ $Y + 3 = -4/5 (X - 2)$ $+5Y + 15 = -4X + 8$

Therefore the Linear Function for the given two points: **$+4X + 5Y = -7$**
Check by determing and checking the X and Y intercepts.

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Given: $P_2 = (+1,+2)$ and $P_1 = (-3, -2)$ **Determine the equation of a Linear Function**
Slope as defined as Rise / Run: $m = (+2 - -2) / (+1 - -3) = (+4) / (+4) = +1$

Using Slope Relation again: $(Y_2 - Y_1) = m (X_2 - X_1)$ and either of the points.
$(Y_2 - -2) = (+1) (X_2 - -3)$ $Y + 2 = +1 (X + 3)$ $+Y + 2 = +X + 3$

Therefore the Linear Function for the given two points: **$-X + Y = +1$**
Check by determing and checking the X and Y intercepts.

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