**Slope Formula**

To find a slope given two ordered pairs (x1,y1), (x2,y2), use the slope formula:

m = y2 – y1

x2 – x1

Find the slope given two points:

(x1,y1) (x2,y2)

1) (9, 5) (4, 8) 2) (6 , -3) (4, - 5)

m = 8 – 5 = 3 m = -5 – -3 = -5 + 3 = -2 = 1

4 – 9 -5 4 – 6 4 – 6 -2

**Slope-intercept form**

The Equation of a line is y = mx + b (This is called slope-intercept form)

m= slope = rise Positive rise goes up Negative rise goes down

run Positive run goes right Negative run goes left

b = y-intercept (where the line crosses the y-axis)

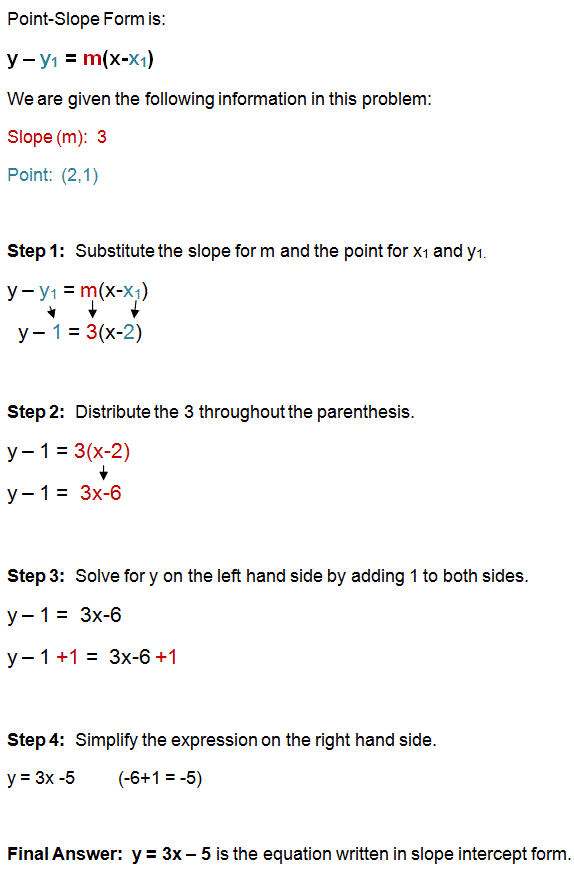
**The point-slope formula**

y − y1 = m(x − x1)

Use this formula, when you know:

one [point](https://www.mathsisfun.com/data/cartesian-coordinates.html) on the line

and the [slope](https://www.mathsisfun.com/geometry/slope.html) of the line



**Calculating Intercepts**

Find the *x*- and *y*-intercepts for the line  .

To find the *y*-intercept, substitute 0 for *x* in the equation.

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | | | |
| Problem | **3*y* + 2*x*** | **=** | **6** |
|  | 3*y* + 2(0) | = | 6 |
|  | 3*y* | = | 6 |
|  |  | = |  |
| *Answer* | *y* | = | 2 |

To find the *x*-intercept, let *y* = 0 in the equation, and solve for *x*.

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | | | |
| Problem | **3*y* + 2*x*** | **=** | **6** |
|  | 3(0) + 2*x* | = | 6 |
|  | 2*x* | = | 6 |
|  |  | = |  |
| *Answer* | *x* | = | 3 |