

**Lesson: Rearranging from Standard Form ( $Ax + By + C = 0$ ) to Slope-Intercept Form ( $y = mx + b$ )**

When an equation is in slope-intercept form ( $y=mx+b$ ) we can easily identify the slope and y-intercept. It also makes graphing the equation a quick task and allows us to easily enter equations into the graphing calculator.

To rearrange an equation to this form, solve the equation for y (get the y by itself).

1. Rearrange  $2x - 2y + 1 = 0$  to slope/y-intercept form.

Steps	Work
<p>→ Isolate the 'y-term' by eliminating the other terms. Applying the opposite operation to both sides of the equation to do this.</p> <p>→ Write the x term first, and the constant term second (keeping with the form <math>y = mx + b</math>)</p> <p>→ Divide both sides by the coefficient of y. Be careful, it may be negative. When dividing an entire side by the coefficient, EVERY TERM must be divided.</p> <p>→ Place your fractions in lowest terms.</p>	$2x + 2y + 1 = 0$

\*\*\*if the equation is in standard form ( $=0$ ) and the coefficient of the 'y-term' is negative, try eliminating the 'y-term' first and see what happens...

2. Rearrange the following to slope/y-intercept form.

$x + 3y + 9 = 0$	$2x + 5y = 0$	$5x - 3y = -4$	$3x - y = 0$
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Practice: Rearranging the equation of a line into  $y = mx + b$  form

Rearrange the following equations into  $y = mx + b$  form

a) $2x + y - 3 = 0$	b) $3x - y + 5 = 0$
c) $9x - 5y + 5 = 0$	d) $4x - 3y + 6 = 0$
e) $3x - y = 7$	f) $5x - y + 2 = 0$
g) $-3y + 6x = 0$	h) $2x + 3y = -24$
<p>i) Paul's catering company charges according to the equation <math>250x - 10y + 2000 = 0</math>, where <math>y</math> represents the total cost and <math>x</math> represents the number of people. Rearrange this equation to determine his charge per person and fixed cost.</p>	
<p>ANSWERS: a) <math>y = -2x + 3</math>, b) <math>y = 3x + 5</math>, c) <math>y = 9/5x + 1</math>, d) <math>y = 4/3x + 2</math>, e) <math>y = 3x - 7</math>, f) <math>y = 5x + 2</math>, g) <math>y = 2x</math>, h) <math>y = -2/3x - 8</math>, i) <math>y = 25x + 200</math> (\$25 per person &amp; \$200 fixed/initial fee).</p>	