**6.4: 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** |
|  | *2x + 2y + 1 = 0* |
| 🡪 Isolate the ‘y-term’ by eliminating the other terms. Applying the opposite operation to both sides of the equation to do this. 🡪 Write the x term first, and the constant term second (keeping with the form y = mx + b) |  |
| 🡪 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. |  |
| 🡪 Place your fractions in lowest terms.  |  |

\*\*\*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…

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

|  |  |  |  |
| --- | --- | --- | --- |
| *x + 3y +9 = 0* | 2x +5y = 0 | *5x – 3y = -4* | *3x – y = 0* |

Practice: Rearranging the equation of a line into y = mx + b form

Rearrange the following equations into y = mx + b form

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