Section 6.2 – Equation of a Line in Standard Form

MPM1D
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The equation of a line can be written in two different forms:

1. Slope y-intercept form: $y = mx + b$

where m is the slope, and b is the y-intercept

2. Standard form: $Ax + By + c = 0$

where A, B, and c are _____ and A and B are both not _____.

You can change an equation from one form to the other by rearranging the equation.

Example 1:
Write the equation of the line 2x – 3y – 6 = 0 in slope y-intercept form by isolating the y.

Example 2: Write each equation in slope y-intercept form and state the slope and the y-intercept.

a) $3x + 5y - 15 = 0$

b) $7x - 3y + 21 = 0$

Example 3: Barney's Banquet Facility charges according to the equation $2x - y + 200 = 0$ where x is the number of people attending and y is the total cost.

a) Write the equation in slope y-intercept form.

b) What is the fixed cost?

c) What is the rate of change of the cost?

d) What is the total cost if 125 people attend a banquet at Barney's?

e) If the total cost is $920, how many people attend the banquet?

Consolidate:

1. There are two forms in which the equation of a line can be written. What are they?

2. It is possible to convert an equation from one form to the other by _____ the equation.

3. Write the slope-intercept form of the equation of each line:

a) $3x - 2y = -16$

b) $13x - 11y = -12$

c) $9x - 7y = -7$

d) $x - 3y = 6$

e) $6x + 5y = -15$

f) $4x - y = 1$

g) $11x - 4y = 32$

h) $11x - 8y = -48$