

# STANDARD FORM

Any line can be written in this form....

$$Ax + By = C$$

where the following conditions hold

1. There are **NO FRACTIONS** or **DECIMALS**
2. The **coefficient** of **A** must be **POSITIVE**

## STANDARD FORM -> SLOPE-INTERCEPT

- Standard form does not tell us anything, but is used in mathematics later....

THEREFORE, WE MUST TURN

$$Ax + By = C \quad \text{INTO} \quad y = mx + b$$

Examples: Turn the following standard form equations to slope-intercept.

$$x + 6y = -6$$
$$-x \quad -x$$

$$\frac{6y}{6} = \frac{-x}{6} - \frac{6}{6}$$

$$y = -\frac{1}{6}x - 1$$

$$27x - 21y = -7$$
$$-27x \quad -27x$$

$$\frac{-21y}{-21} = \frac{-27x}{-21} - \frac{7}{-21}$$

$$y = \frac{9}{7}x + \frac{1}{3}$$

## SLOPE-INTERCEPT -> STANDARD FORM

- Standard form is used in CONICS and is helpful for intercepts

**THEREFORE, SOMETIMES, WE MUST TURN**

$$y = mx + b \quad \text{INTO} \quad Ax + By = C$$

Examples: Turn the following slope-intercept into standard form.

$$y = 4x - 7$$

$$y = -2/3x + 2$$

$$y = 4x - 7$$

$$-4x - 4x$$

no \*  
neg. A

$$(-4x + y = -7)$$

$$4x - y = 7$$

$$y = -\frac{2}{3}x + 2$$

$$+\frac{2}{3}x + \frac{2}{3}x$$

no \*  
Fact.

$$(\frac{2}{3}x + y = 2)$$

$$2x + 3y = 6$$