2.4 Writing Linear Equations

Case 1
Write a linear equation, given slope and y-intercept

Slope intercept form is $y = mx + b$

substitute slope for m and y-intercept for b

Example: Write the equation of the line whose slope is -2 and whose y-intercept is 4.

Case 2:
Write a linear equation, given 2 points

In order to write in slope intercept form, you need to find the slope (formula) and then use one of the points.

Example: Write the equation of the line that goes through (2, -3) and (-3, 7)

Point Slope Form

$y - y_1 = m(x - x_1)$

Case 3:
Write a linear equation, given y-intercept and x-intercept

Since you still need slope, use the intercepts as points to calculate the slope.

Example 3 Write the equation of a line whose x-intercept is 5 and whose y-intercept is -3

Case 4:
Write a linear equation parallel to another line

Since you still need slope, use the equation of the 2nd line to find the new slope.

Example: Write the equation of the line that goes through (1, -2) and is parallel to $y = -5x + 1$

Reminder!!!

Parallel Lines have _____ slope!!!

Case 5:
Write a linear equation perpendicular to another line

Since you still need slope, use the equation of the 2nd line to find the new slope.

Example: Write the equation of the line that goes through (3, -2) and is perpendicular to y = 2x -2

Reminder!!!
Perpendicular Lines have _____ slope!!!

As a part time salesperson, Jean Stock is paid a daily salary plus commission. When her sales are $100, she makes $58. When her sales are $300, she makes $78.

a) Write a linear equation to model the situation. Define your variables

b) What are Ms. Stock's daily salary and commission rates?

c) How much would Jean make in a day if her sales were $500?