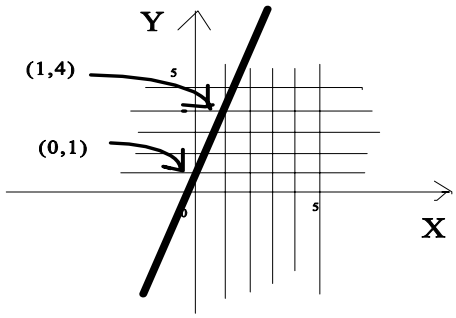
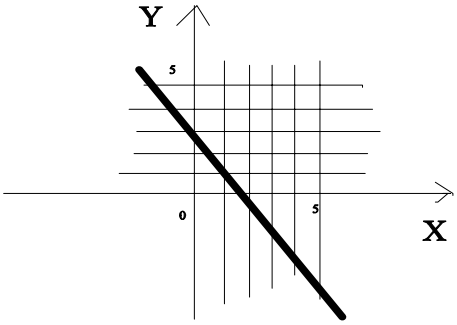
EPRS8540
Quick Review of Line Equation

Note: If you have never learned the line equation before, please find a math book that explains the line equation. If you are rusty, then this quick review may help you remember what it is. If you can answer the two questions below, you are OK in terms of starting the ANCOVA chapter in which you need to understand the line equation.



A line equation can be expressed as $y = b_0 + b_1x$ where b_0 is an "intercept" and b_1 is a "slope". The intercept indicates where the line intercepts on the y axis and the slope indicates how much y increases as x increases by 1.
You also need to know that each point in the graph can be expressed by (x, y).

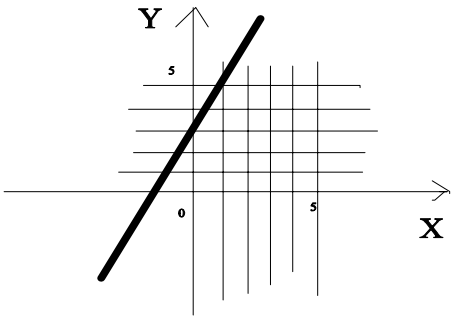
The line equation on the left is $y = 1 + 3x$. In other words, the intercept is 1 and the slope is 3. The intercept is the value of y when x = 0. Do you see the line goes through the point where (x, y) = (0, 1)? Do you see that y increases by 3 as x increases by 1? Start from (0, 1) and go to left by one, then you need to go up 3 to find the line. The line goes through (1, 4). Verify that both (0, 1) and (1, 4) satisfy the equation $y = 1 + 3x$.



Now what is the equation on the left? $y = 3 - 2x$. The slope is negative because the value of y decreases as x increases. To be more specific here, y decreases by 2 as x increases by 1. The intercept is 3 because it goes through (0, 3).

Coming back? Now let's try the two questions below.

Question 1: What is the line equation below?



Question 2: Draw $y = 1 - .5x$ (or $y = 1 - ½x$)