Section 1.4: Linear Model Graphs and Equations
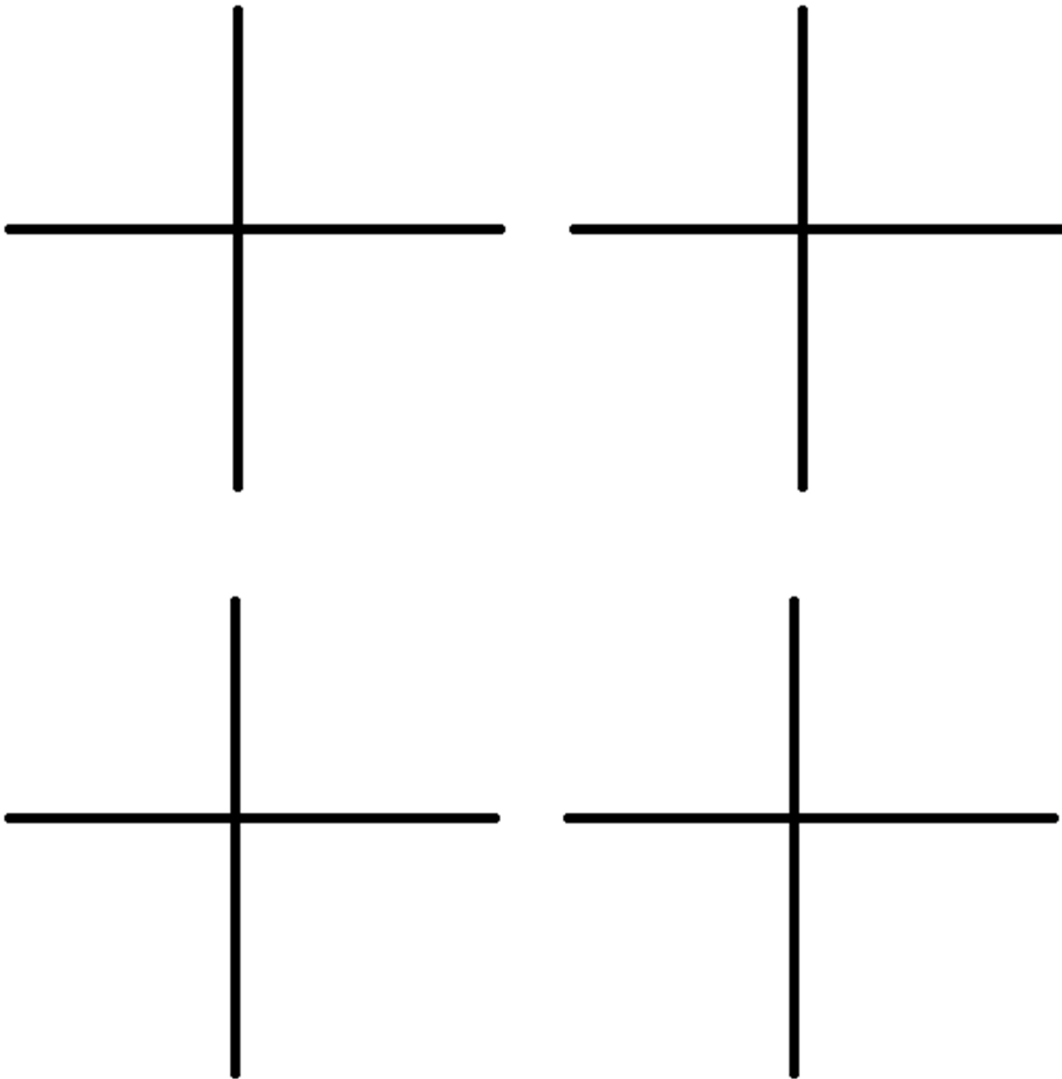
A linear model is an equation and graph that increases or decreases at a constant rate called:

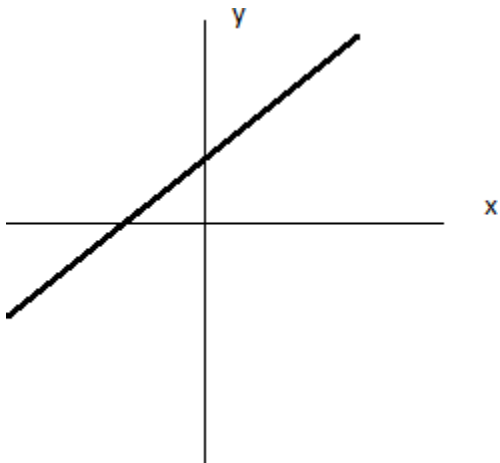   **I.**   **The concept of slope (steepness) of a linear model**
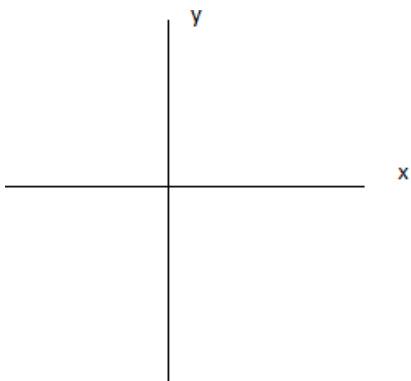
Part II: Equations of linear models

1. Finding the slope between two points on a line.

2. Slope-Intercept form of a line.
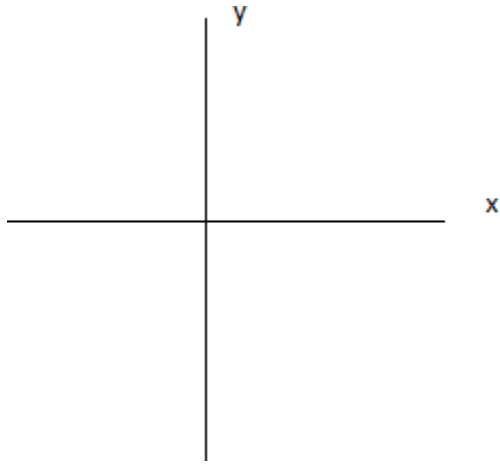
Part III: Examples of Linear Models (Algebraic)

1. Estimate in y = b + mx form the equation of the line given below.

2. Find the slope of the line that passes through the points (-2, 4) and (6, -4).

3. Find the equation of the line that passes through the points (2, 5) and (-1, -1) in the form y = b + mx.

$$y$$

$$x$$

4. What is the slope and y – intercept for the line 3x – 2y = 6?

Part II: Linear Model Examples (Applications)

1. Given the graph and model below, find the "alertness level" of a person in class after 20 minutes.

10

Alertness Level

5

10   20   30   40   50

Minutes in Class
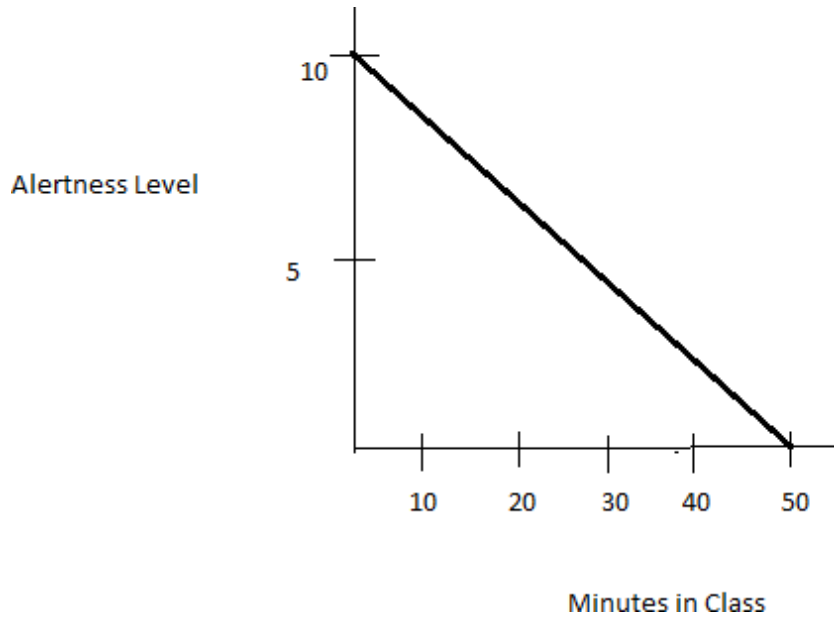
2. Create a linear model to predict a teacher's salary in Radford City Public Schools in the form
   $y = b + mx$ form.

   What is the teacher's salary after 17 years of experience?

   How long will it take for a teacher to earn $_____per year?