

Homework 4.5  
Writing Point-Slope Equations to Fit Data

- 1) The following table shows the ice-cream sales at Kaleidoscoops Ice Cream Parlour throughout one week in the summer.

Day	Temperature (°F)	Sales (cones)
Sunday	83	206
Monday	78	195
Tuesday	70	155
Wednesday	61	120
Thursday	65	150
Friday	72	168
Saturday	81	201

- Make a scatter-plot of the data on graph paper. Put the temperature on the  $x$ -axis and the sales on the  $y$ -axis. Because the numbers are so far from zero, you shouldn't begin your scales at zero. For instance, your  $x$ -axis could go from 60 to 85.
- Draw a line of fit...a line that shows the general direction of the data.
- Write the coordinates of any two points *on the line* (they don't have to be the points that are in the table)
- Find the slope of the line using the two points from part b.
- Explain why it would be very difficult to find the  $y$ -intercept of the line using your graph.
- Using the first point you wrote in part (c) and the slope from part (d), write the equation of your line in point-slope form:  $y = y_1 + b(x - x_1)$
- Using the second point you wrote in part (c) and the slope from part (d), write the equation of your line in point-slope form:  $y = y_1 + b(x - x_1)$
- Using the distributive property and by combining like terms, rewrite your equation in part (f) in slope-intercept form.
- Using the distributive property and by combining like terms, rewrite your equation in part (g) in slope-intercept form.
- Now that you have two equations, estimate what the  $y$ -intercept is.
- The weather report for the next day is a temperature of 88°F. Estimate the number of ice-cream cones that will be sold using the equation from question (h). Show your work.