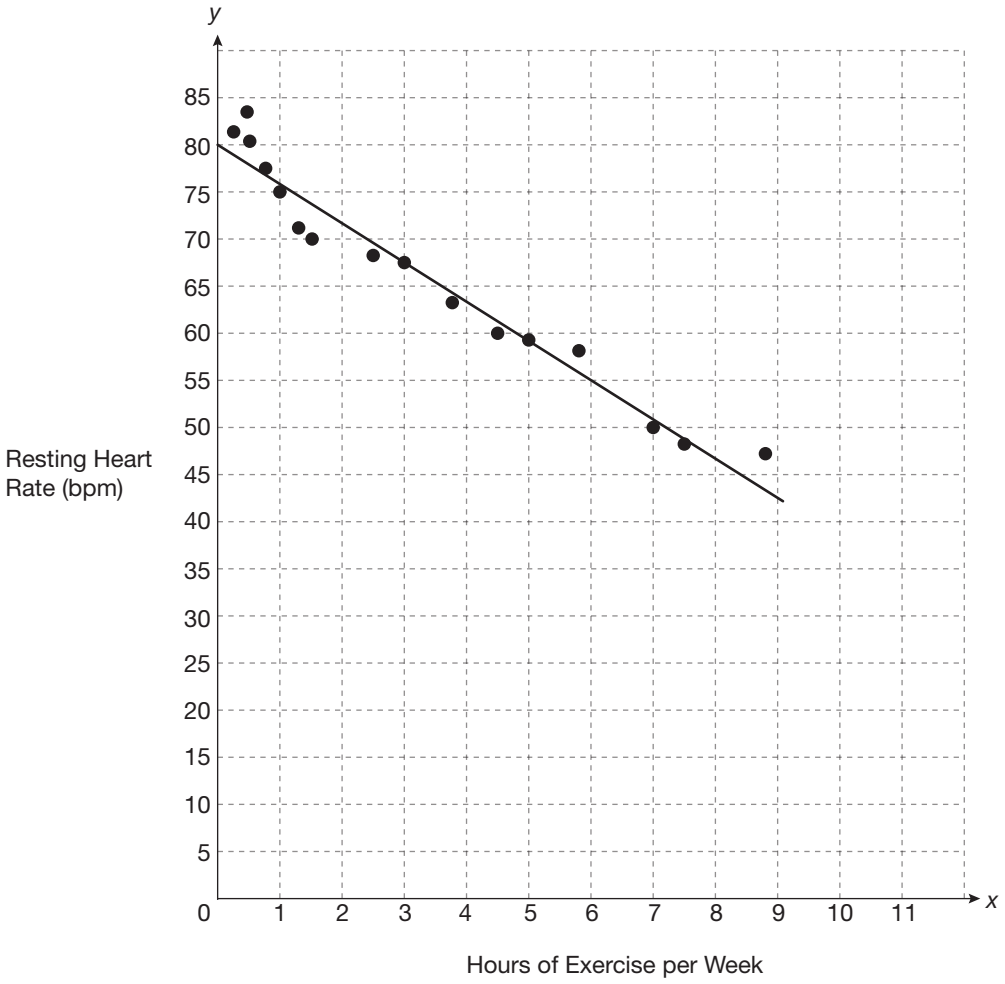
Practice – Part 1

Instructions: Answer each of the following practice questions on a separate piece of paper. Step by step solutions are provided under the Solutions tab. You will learn the material more thoroughly if you complete the questions before checking the answers under the Solutions tab in Moodle.

1. The following scatterplot shows the resting heart rates (in beats per minute) for various 30-year-old males compared to the hours of exercise they get per week. The line of best fit has been drawn.

Resting Heart Rate of 30-Year-Old Men Compared to Hours of Exercise



a. Describe the trend between the hours of exercise and the resting heart rate of 30-year-old males.

b. If a 30-year-old male exercises 2 hours per week, what is his resting heart rate?

c. If a 30-year-old male has a resting heart rate of 65 beats per minute, approximately how many hours would he exercise per week?

2. Lee receives a base salary plus paid commission on his sales at a computer store. The equation that represents his salary is $y = 0.05x + 100$, where x is the computer product sales in dollars and y is Lee's earnings in dollars.

   a. Does the equation represent direct variation or partial variation?

   b. What does the slope of the line represent?

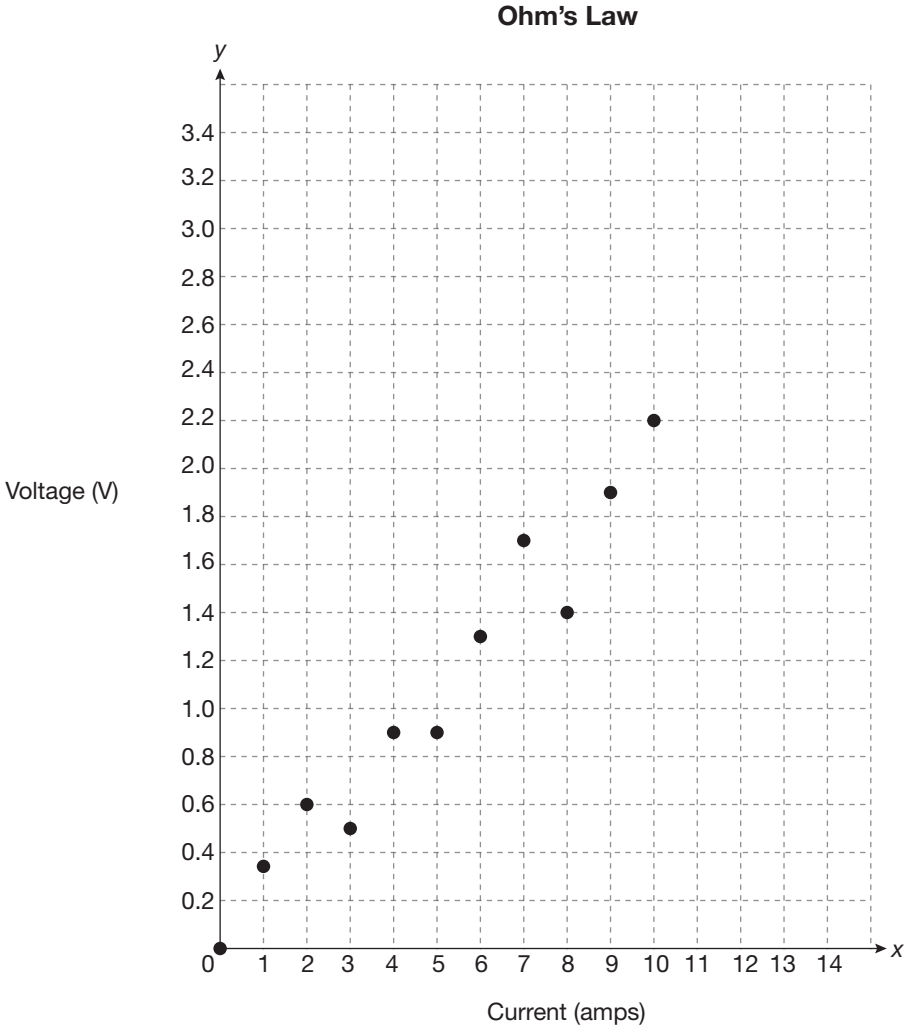
   c. What does the y-intercept represent?

   d. How much will Lee earn if he sells computer products worth $\$1\,000$?

   e. Set up a table of values to draw the graph of Lee's earnings. Include the values of $\$1\,000, \$2\,000, \$3\,000, \text{and } \$4\,000$ in sales when calculating Lee's earnings. Use the equation $y = 0.05x + 100$.

   f. Use the graph to determine how much Lee needs to sell to earn $\$400$.

3. Ohm's law is an important direct variation relationship between current and voltage. The scatterplot for voltage compared to current is displayed below.



a. State if the scatterplot shows positive correlation, negative correlation, or no correlation.

b. What trend is seen in the scatterplot?

c. Draw the line of best fit.

d. What is the voltage when the current is 13 amps?

e. What is the current when the voltage is 2.0 volts?