Lines, slopes, and more: Representations
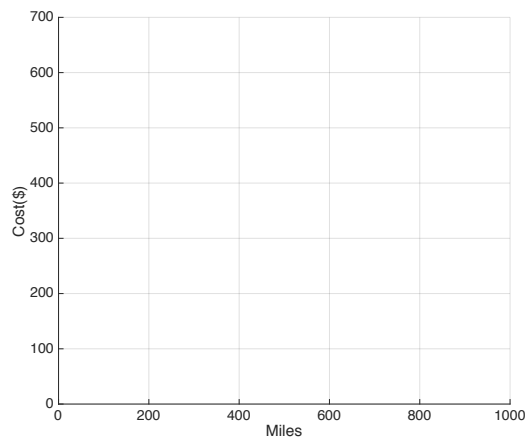
1. A truck rental company charges a **$150** rental fee in addition to a charge of **$0.50** per mile driven.

   a. Graph the linear function relating the total cost of the rental in dollars, **C**, to the number of miles driven, **x**, on the axes below.


   b. If the truck is driven **0** miles, what is the cost? How is this shown in the graph?

   c. What is the slope of the line you drew in (a)? What does it mean in the context of the problem?

   d. Write the equation of the linear function that models the relationship between number of miles driven and total rental cost.

Slope-Intercept form:

Useful for:

2. An online bookseller has a new book in print. The company estimates that if **30** copies of the book will be sold per day, they will make a profit of **$20**. For every additional **1** book sold per day, their profit will increase by **$2**.

    a. Identify the ordered pair described in the problem.

    b. If **50** books are sold per day, what would be the profit?

    c. If **x** books are sold per day, what would be the profit? Express your result as a function of x.

    d. Graph the linear function relating the copies sold per day and the cost of the book.
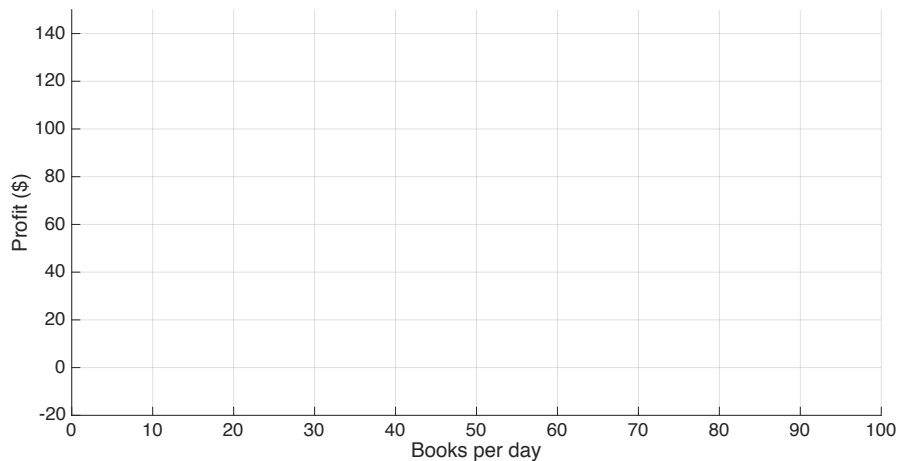

Point-Slope form:

Useful for:

3. Jenna bought a **3**-year old car for **$18,000**. A new car costs **$25,500**.

    a. Identify the <u>TWO</u> ordered pairs described in the problem.

    b. Assuming the decrease in car value remains the same over the years. What would be the value of the car after **5** years?

    c. What would be the value of the car after **x** years?

    d. Graph the linear function relating the years passed and the value of the car.
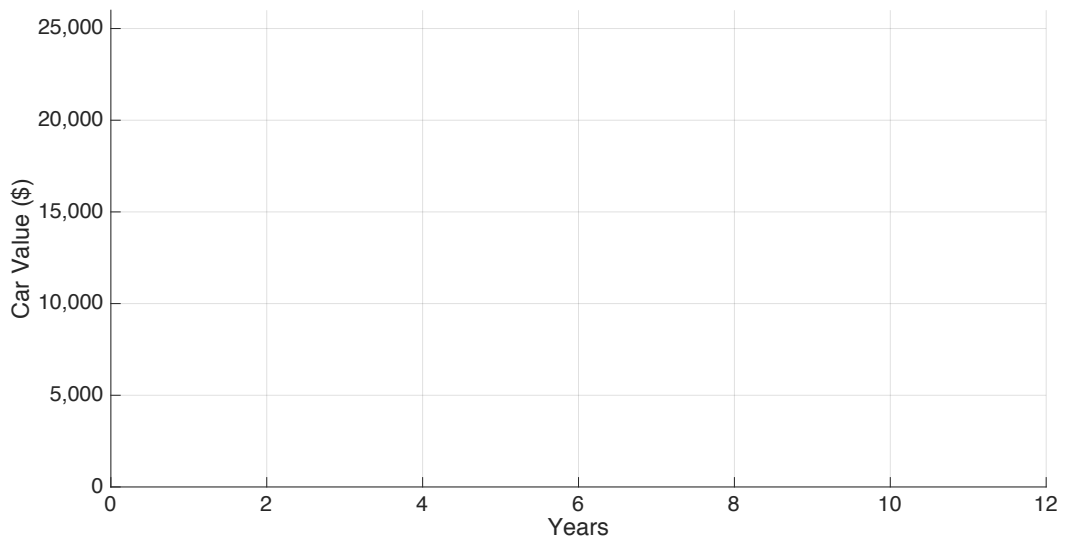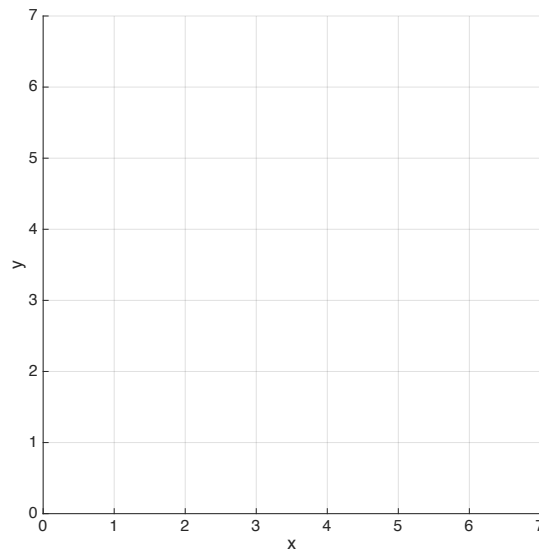

Two-point form:

Useful for:

4. A linear line is described by the equation

$$3x + 5y = 15$$

    a. Without drawing the line, find the <u>x-intercept</u>.

    b. Without drawing the line, find the <u>y-intercept</u>.

    c. Graph the linear function described above. Mark on the graph the x-intercept and y-intercept.

Standard form:

Useful for: