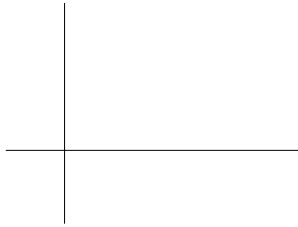
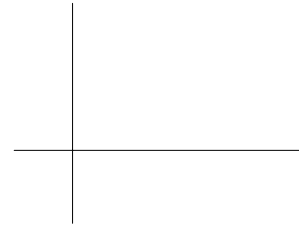


1. As you travel from Tucson to Bisbee (94 miles), you pass through Benson. Benson is 40 miles from Tucson. You can assume that you travel at a fairly constant speed. Sketch graphs to represent the functions below. Label the axes and any important features of your graphs.

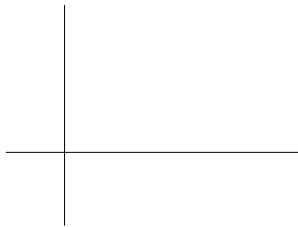
A. distance from Tucson as a function of time.



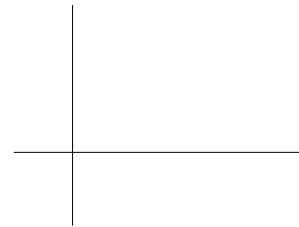
B. distance from Benson as a function of time



C. distance from Bisbee as a function of time.



D. speed as a function of distance.



2. The relationship between the tuition, T , and the number of credits, c , at a particular college is given by

$$T(c) = \begin{cases} 100 + 120c & 0 \leq c \leq 6 \\ 800 + 120(c - 6) & 6 < c \leq 18 \end{cases}$$

A. What is the tuition for 7 credits?

B. If the tuition was \$1880, how many credits were taken?

C. What is the domain of this function?

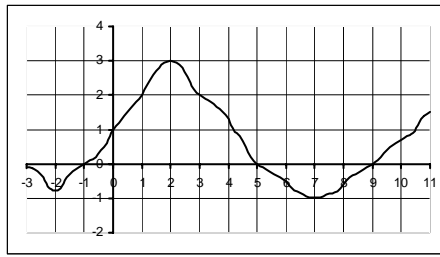
D. What are the practical interpretations of the vertical intercept and the slope?

3. Suppose the rate, R , at which people in a particular town hear a rumor is proportional to the number of people who have not heard the rumor. Let L be the total population of the town.

A. Write a formula for R . Include the sign of the proportionality constant.

B. Find the vertical intercept and the slope.

4. Use the graph at the right to answer the questions below.



A. Find $f(0)$.

B. On what intervals is $f(x)$ increasing?

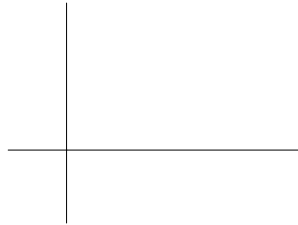
C. Find x so that $f(x) = 2$.

D. For what value is $f(x) = x$?

E. Find the zeros of $f(x)$.

F. What is $f(f(7))$?

5. Sketch $H(\alpha) = H_o(1 - \alpha \cdot \Delta t)$. Label the axes and the intercepts clearly. The constants are positive.



6. Solve $g(y) = 5$ for $g(y) = \sqrt{y^2 - 16^2}$.

7. Find the domain and range of $f(x) = \left| \frac{9 - x^2}{x + 3} \right|$.

8. Find an example of a function (in table, graph, or equation form) from the internet, newspaper, or magazine. Cut it out or print it (include appropriate documentation).

A. Give a brief summary of your example. Include why it is an example of a function.

B. Determine the independent and dependent variables. Include your reason.