## Fun with Functions and Relations

Name:

1) Which of the below relations are functions. Circle all the functions and explain why they are functions and/or why the others are not functions.



Explain:

2) The relation  $\{(1, 10), (0, -2), (6, -5)\}$  is a function. Which of the ordered pairs below could be added to this relation and still have a function?

(1, -2), (0, 4), (-7, -5), (6, -8)

3) The accompanying graph shows the heart rate, in beats per minute, of a jogger during a 4- minute interval.

What is the range of the jogger's heart rate during this interval?

a) 0-4 b) 1-4

- c) 0-110
- d) 60-110



4) The voltage, V, in a circuit is a function of time t, and is given by:  $V(t) = 3t - 1.02t^2$ 

a) Find the voltage at 8 seconds

b) Evaluate V(4)

- 5) Given  $f(x) = 2x^2 3x + 6$ , find f(4).
- 6) State the domain and range of each of the following graphs.



7) Graph and state the domain and range of the function  $f(x) = -x^2 + 9$ 



8) What is the domain of  $f(x) = \sqrt{x-6}$ . (Hint: Put it in your calculator to help you see the domain.)