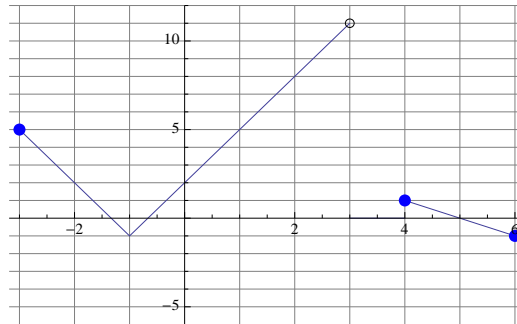


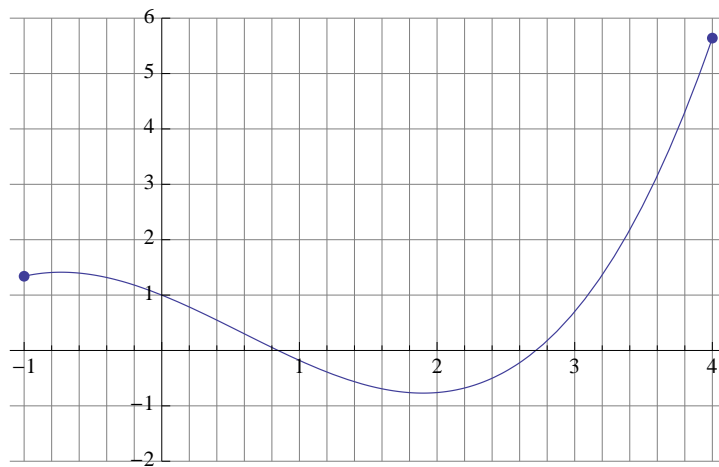
Math 29  
PAL Worksheet 2

1. The graph of a function  $g$  is shown. Answer the questions, using approximations if necessary and interval notation where appropriate:



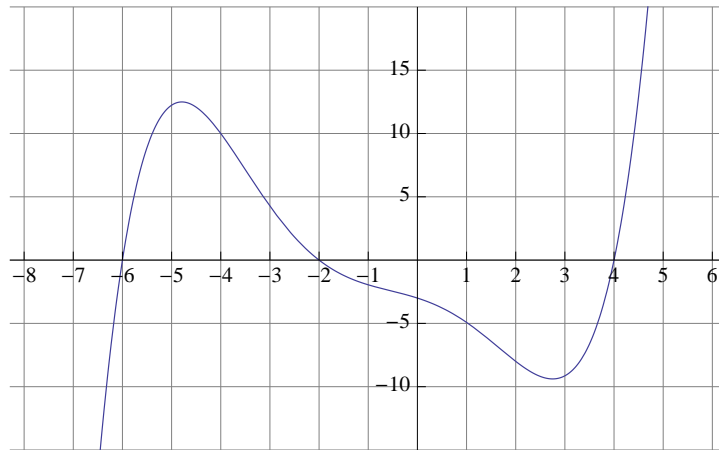
- What is the domain of  $g$ ?
  - What is the range of  $g$ ?
  - Find the value of each of the following:  $g(-3)$ ,  $g(-1)$ ,  $g(0)$ ,  $g(2)$ ,  $g(4)$  and  $g(6)$ .
  - For what value(s) of  $x$  is  $g(x) = 0$ ?
  - For what value(s) of  $x$  is  $g(x) = 5$ ?
  - For what value(s) of  $x$  is  $g(x) = -1$ ?
2. Does the rule that assigns each student in our class to the amount of money he or she has with them right now describe a function? Explain.
3. Does the rule that assigns each student at Sac State to the math class he or she is enrolled in this semester describe a function? Explain.
4. Does the rule that assigns each student at Sac State to the book he or she has checked out of the library right now describe a function? Explain.
5. Does the rule that assigns each student in our class to his or her birthday describe a function? Explain.

6. The graph of a function is shown.



- What is the domain of the function? Use interval notation to answer, using approximations if necessary.
- What is the range of the function? Use interval notation to answer, using approximations if necessary.

7. The graph of a function  $y = f(x)$  is shown. Answer each question. Use approximations where necessary and use interval notation where appropriate.



- a. What are  $f(-2)$  and  $f(2)$ ?
- b. What are  $f(-3)$  and  $-f(3)$ ?
- c. What are  $f(-6) + f(2)$  and  $f(-6 + 2)$ ?
- d. Which is bigger,  $f(-4)$  or  $f(4)$ ?
- e. Find all  $x$  where  $f(x) = 0$ .
- f. Find all  $x$  with  $f(x) = f(0)$ .
- g. Find all  $x$  with  $f(x) = f(-3)$ .
- h. Find all  $x$  with  $f(x + 2) = 15$ .
- i. Is  $f(5) - f(-5)$  positive, negative, or zero?
- j. Is  $f(2) - f(1)$  positive, negative, or zero?
- k. Is  $f(2) + f(1)$  positive, negative, or zero?
- l. Where is  $f$  decreasing?
- m. Find all  $x$  where  $f(x) < 0$ .
- n. How often does the line  $y = 3$  intersect the graph?
- o. How often does the line  $x = 3$  intersect the graph?
- p. Does the line joining the points  $(-4, f(-4))$  and  $(3, f(3))$  have a positive slope, a negative slope, or a slope of zero?