

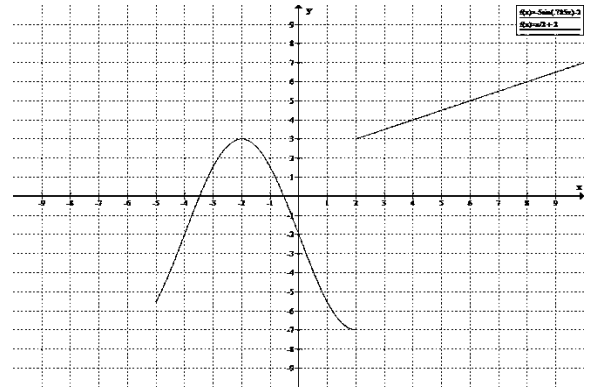
# Test #2 Study Guide

Name: \_\_\_\_\_ Date: \_\_\_\_\_

\*\*\*\*\* THIS IS NOT HOMEWORK\*\*\*\*\*

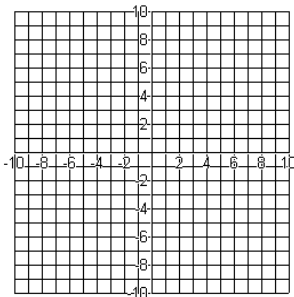
## Lesson 2.7— Use the graph at right to find the following:

- $f(-2)$
- $f(0)$
- $f(4)$
- Find  $x$  when  $f(x) = 6$

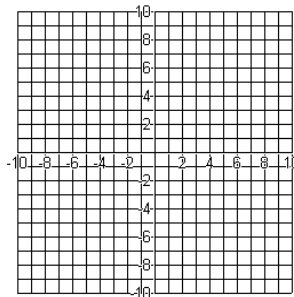


## Lesson 2.7— Sketch the parent function using a table. State the domain and range.

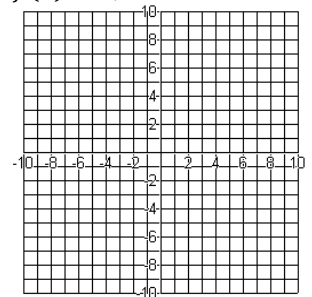
5.  $f(x) = x$



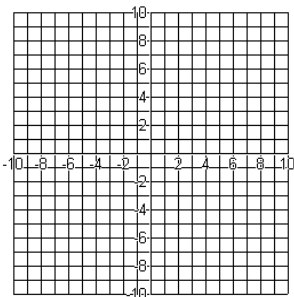
7.  $f(x) = x^2$



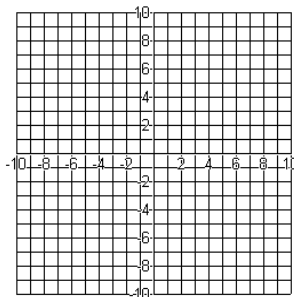
9.  $f(x) = \sqrt{x}$



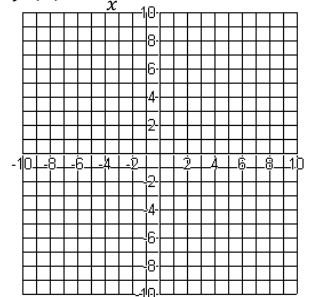
6.  $f(x) = |x|$



8.  $f(x) = x^3$



10.  $f(x) = \frac{1}{x}$

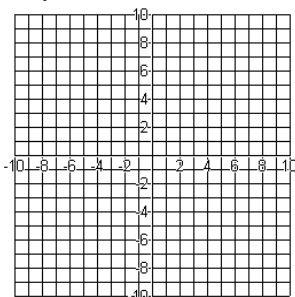


## Lesson 2.7— Name the parent function. Describe the transformations from the parent function.

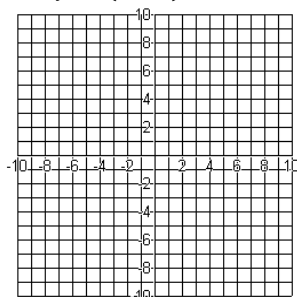
- |                              |                             |                              |
|------------------------------|-----------------------------|------------------------------|
| 11. $y = -\sqrt{x+1}$        | 13. $y = - x  - 9$          | 15. $y = \frac{1}{3}x^3 - 8$ |
| 12. $y = \frac{1}{2}(x-7)^2$ | 14. $y = \frac{1}{x+5} + 2$ | 16. $y = 7x - 1$             |

## Lesson 2.8— Graph the inequalities.

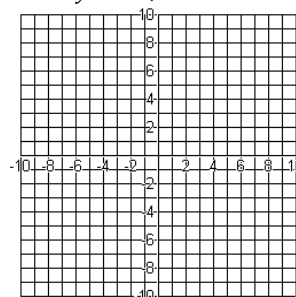
17.  $y \geq -4$



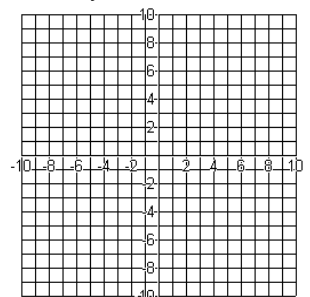
18.  $y \geq (x+3)^2 + 2$



19.  $y > -\sqrt{x-5}$



20.  $y < |x-4| - 6$



**Lesson 5.1**— Simplify the following.

21.  $(m^4n^6)^4(m^3n^2p^5)^6$

24.  $\frac{(3x^{-2}y^3)(5xy^{-8})}{(x^{-3})^4y^{-2}}$

26.  $\frac{-20(m^2v)(-v)^3}{5(-v)^2(-m^4)}$

22.  $\left(\frac{3}{2}d^{-2}f^4\right)^4\left(-\frac{4}{3}d^5f\right)^3$

25.  $\frac{-27x^3(-x^7)}{16x^4}$

27.  $(4d^2t^5v^{-4})(-5dt^{-3}v^{-1})$

23.  $\left(\frac{2x^3y^2}{-x^2y^5}\right)^{-2}$

28.  $-(4w^{-3}z^{-5})(8w)^2$

**Lesson 6.1**— Simplify the following.

29.  $(5n - 3)^2$

31.  $(w + 2t)(w^2 - 2wt + 4t^2)$

34.  $4x(2x^{-1} - x - 2) - 5(x^2 + 2x)$

30.  $(6w - 11w^2) - (4 + 7w^2)$

32.  $(3n^2 + 1) + (8n^2 - 8)$

35.  $(g + 5) + (2g + 7)$

33.  $(5d + 5) - (d + 1)$

36.  $(x + y)(x^2 - 3xy + 2y^2)$

**Lesson 6.1**— Evaluate the following expressions given the functions below.

$f(x) = x^2 - 1$

$g(x) = 2x - 3$

$h(x) = 1 - 4x$

37.  $(f - g)(x) =$

40.  $(g + f)(-2) =$

43.  $\left(\frac{f}{h}\right)(x) =$

38.  $(f - g)(-1) =$

41.  $(gh)(x) =$

44.  $\left(\frac{f}{h}\right)(2) =$

39.  $(g + f)(x) =$

42.  $(gh)(4) =$

**Lesson 6.1**— Evaluate the following expressions given the functions below.

$f(x) = 2x - 1$

$g(x) = 3x$

$h(x) = x^2 + 1$

45.  $f(g(-3)) =$

47.  $g(h(24)) =$

49.  $f(h(x)) =$

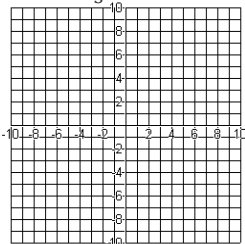
46.  $f(h(7)) =$

48.  $f(f(x)) =$

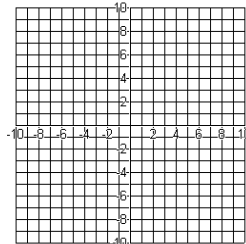
50.  $h(g(x)) =$

**Lesson 6.2**— Find the inverse of each function, state whether the inverse is a function and the graph both.

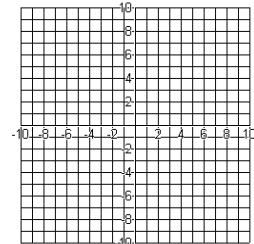
51.  $f(x) = \frac{2x-1}{3}$



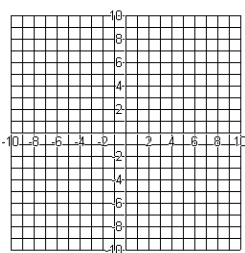
53.  $f(x) = \sqrt{x-2}$



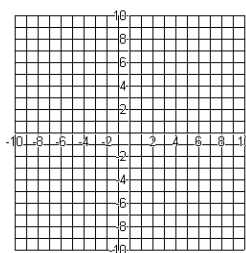
55.  $f(x) = 3x^2 - 9$



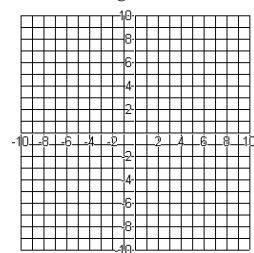
52.  $f(x) = 2x - 3$



54.  $f(x) = x + 2$



56.  $f(x) = \frac{x+2}{3}$



**Lesson 6.2**— Determine whether each pair of functions are inverse functions. Write *yes* or *no*.

57.  $f(x) = 3x - 1$   
 $g(x) = \frac{1}{3}x + \frac{1}{3}$

58.  $f(x) = 2x + 5$   
 $g(x) = 5x + 2$

59.  $f(x) = 8x - 12$   
 $g(x) = \frac{1}{8}x + 12$