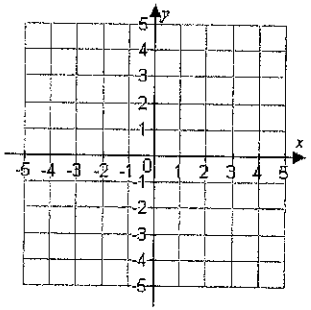
Name: _____ Date: _____

1. Determine the quadrant(s) in which (x, y) is located so that the condition is satisfied.

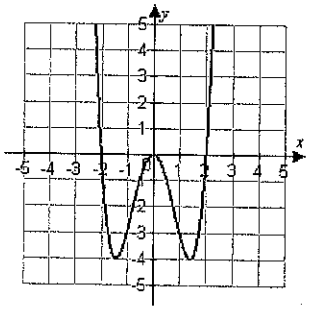
   $x = 9$ and $y < -6$

2. Find three ordered pairs satisfying $y = -4x - 2$.

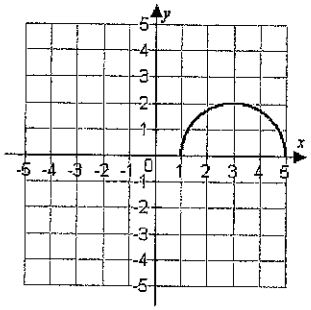
3. Create and complete a table to find the x and y coordinates of points that lie on the graph of the equation $y = x^2 - 4x$. Plot at least 5 points along with the graph of the equation.



4. Find the x- and y-intercepts of the graph of the equation $y = x^4 - 4x^2$.



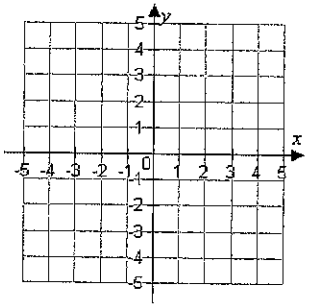
5. Assuming that the graph shown has y-axis symmetry, sketch the complete graph.



6. Given $x^2 + y^2 = 4$, use the algebraic tests to determine symmetry with respect to both axes and the origin.

7. Plot the points and find the slope of the line passing through the pair of points.

   (2, 0), (–5, 3)



8. Determine whether lines L_1 and L_2 passing through the pairs of points are parallel, perpendicular, or neither.

   L_1: (7, –8), (–9, 2)
   L_2: (–8, 7), (9, –4)

9. Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope.

   point: (–7, 9) slope: $m = 3$

10. Does the table describe a function?

Input value	–4	–3	0	3	4
Output value	19	19	19	19	19

11. Evaluate the function at the specified value of the independent variable and simplify.

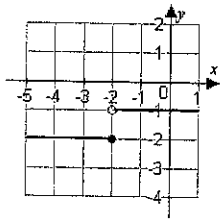
$f(s) = 7s - 3$

$f(-2.2)$

12. Find the domain of the function.

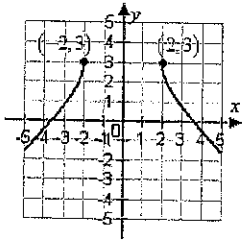
$$f(p) = \frac{9p}{p-6}$$

13. Use the graph of the function to find the domain and range of f.



14. Determine the intervals over which the function is increasing, decreasing, or constant.

$f(x) = -\sqrt{x^2 - 4} + 3$



15. Find the average rate of change of the function from x_1 to x_2.

$f(x) = x^2 + 4x + 7$ $\quad x_1 = 5,\ x_2 = 7$

16. Describe the sequence of transformations from the related common function $f(x) = \sqrt{x}$ to g.

$g(x) = -\sqrt{x} + 5$

17. Write an equation for the function that is described by the following characteristics:

the shape of $f(x) = x^2$, but moved five units down, seven units to the left, and then reflected in the x-axis

18. Find $(f + g)(x)$.

$f(x) = -3x^2 + 7x - 7$
$g(x) = -x^2 - x + 1$

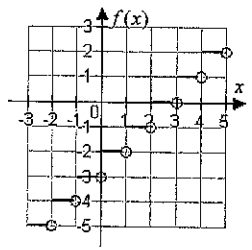
19. Find $(f / g)(x)$.

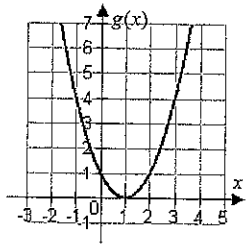
$f(x) = 5x^2 - 9x$ $\quad g(x) = -8 - x$

20. Find $g \circ f$.

$f(x) = x - 5$ $\quad g(x) = x^2$

21. Use the graphs of f and g to evaluate the function.





$(f \circ g)(2)$

22. Find the inverse function of $f(x) = -4x + 5$

23. Find the inverse function of f.

$f(x) = x^5 - 5$