NAME:	REVIEW 8
DATE:	ALGEBRA

Multiple Choice

- 1. The result of factoring a quadratic equation is (n 5)(n + 6) = 0. What is the solution set for this equation? a. $\{-1\}$ b. $\{1\}$ c. $\{-5,6\}$ d. $\{-6,5\}$
- 2. If a quadratic equation has exactly one real root, what must be true of its graph?
 - a. The graph of the function opens upward.
 - b. The graph of the function opens downward.
 - c. The graph of the function intersects the *x*-axis exactly once.
 - d. The graph of the function intersects the *y*-axis exactly once.
- 3. Which set represents the root(s) of the equation corresponding to the function graphed at right?
 - a. {1.5}
 b. {-1,4}
 c. {4}
 d. {-1,1.5,4}



- 4. What is the solution set of the quadratic-linear system graphed at right?
 - a. {(0,5)}
 b. {(-2,0), (2,0)}
 c. {(4,-1), (4,1)}
 d. {(-1,4), (1,4)}
- 5. Which of the following linear equations would form exactly one solution, when graphed with the quadratic equation shown at right?
 - a. y = -5.5b. y = -4c. y = -2d. y = 0





Find the discriminate and describe the nature of the roots. 6. $y = 2x^2 - 3x - 10$ 7. $y = 3x^2 + 6x + 5$

8.
$$y = x^2 - 4x - 4$$

9. $y = 2x^2 + 5x - 12$

Rewrite the quadratic function in vertex form and identify the vertex. 10. $y = x^2 + 4x - 2$ 11. $y = x^2 - 6x + 10$

Identify the transformation required to change $f(x) = x^2$ into the given function.

12. $f(x) = -(x+3)^2 + 5$ 13. $f(x) = 2(x-6)^2 - 1$

Solve.

14.
$$x^2 - 12 = 11x$$
 15. $\frac{x+7}{9} = \frac{3}{x+1}$

Solve and leave your answers in simplest radical form. 16. $x^2 + 2x - 2 = 0$ 17. $2x^2 - x - 2 = 0$

Write the equation for the given graph. 18.



For each of the given functions:

- a. Draw the graph.
- b. Does the function have a maximum or minimum?
- c. Write the coordinates of the turning point.
- d. What is the axis of symmetry?
- e. What are the roots?

19.
$$y = x^2 - x - 2$$



20.
$$y = -x^2 + 8x - 12$$



21. Solve the system of equations graphically.

$$y = -x^2 + 2x + 1$$
$$y = x - 5$$



Solve the system of equations algebraically. $y = x^2 - 4x + 9$ y = 2x + 122.

23. The second of two integers is 5 more than twice the first. The sum of the squares of the integers is 130. Find the possible pairs of integers.

- 24. During a tropical storm, an antenna broke loose from the roof of a building 144 feet high. Its height *h* above the ground after *t* seconds is given by $h(t) = -16t^2 + 144$.
 - a. After how many seconds will the antenna be 128 feet high?
 - b. After how many seconds will the antenna reach the ground?