

Unit 6 Practice Exam

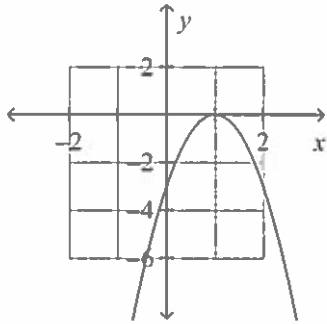
Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. Which of the quadratic functions has the widest graph?
 a. $y = -\frac{1}{2}x^2$ b. $y = -5x^2$ c. $y = -3x^2$ d. $y = -\frac{7}{8}x^2$

- _____ 2. A parabola _____ has an axis of symmetry.
 a. always b. sometimes c. never

- _____ 3. For which discriminant is the graph possible?

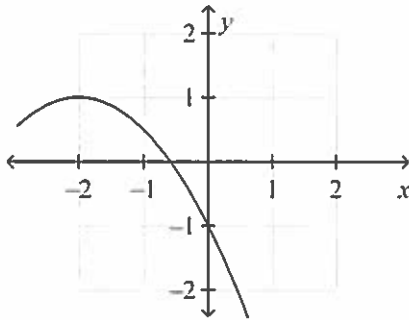


- a. $b^2 - 4ac = 6$ b. $b^2 - 4ac = -9$ c. $b^2 - 4ac = 0$

- _____ 4. Use the discriminant to find the number of solutions for the equation. $x^2 - 16x + 60 = 0$
 (YOU DO NOT HAVE TO SOLVE.)
 a. 0 b. 1 c. 2

Short Answer

5. Identify the vertex of the graph. Tell whether it is a minimum or maximum.



Name: _____

A

6. Order the group of quadratic functions from widest to narrowest graph.

$$y = -2x^2, y = \frac{2}{3}x^2, y = -\frac{1}{4}x^2$$

Use any method to solve the equation. If necessary, round to the nearest hundredth.

7. $6x^2 - 31 = 0$

8. Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of the function.

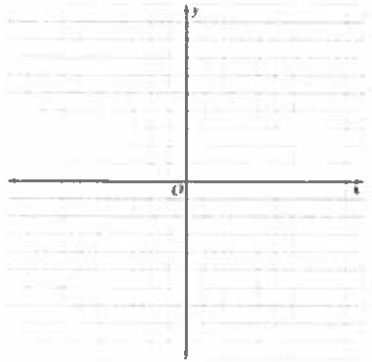
$$y = 2x^2 + 4x - 3$$

AXIS OF SYMMETRY: $x =$ _____ VERTEX: (____, ____)

9. Solve the equation using square roots. $x^2 - 14 = -10$

10. Solve the equation using square roots. $3x^2 = 54$

11. Graph $f(x) = x^2 + 4x - 3$



Name: _____

A

12. Solve the equation by quadratic formula or factoring. $z^2 + 2z - 8 = 0$

13. Solve the equation by quadratic formula or factoring. $2x^2 + 7x - 15 = 0$

14. Use the Quadratic Formula to solve the equation. $9x^2 + 4x - 16 = 0$

15. Use quadratic formula or factoring to solve the equation. $x^2 - 3x - 4 = 0$

16. Use quadratic formula or factoring to solve the equation. $3x^2 - 6x - 24 = 0$

Name: _____

A

17. Use quadratic formula or factoring to solve the equation. $-3y^2 - 5y = -8$

Solve the equation by quadratic formula or factoring.

18. $-12 = -3x^2 + 9x$

Simplify the radical expression.

19. $\sqrt{144}$

20. $\sqrt{160}$

21. Simplify the radical expression. $\sqrt{128}$

Solve the equation by quadratic formula. Put your answer in simplest radical form.

22. $x^2 + 6x - 10 = 0$