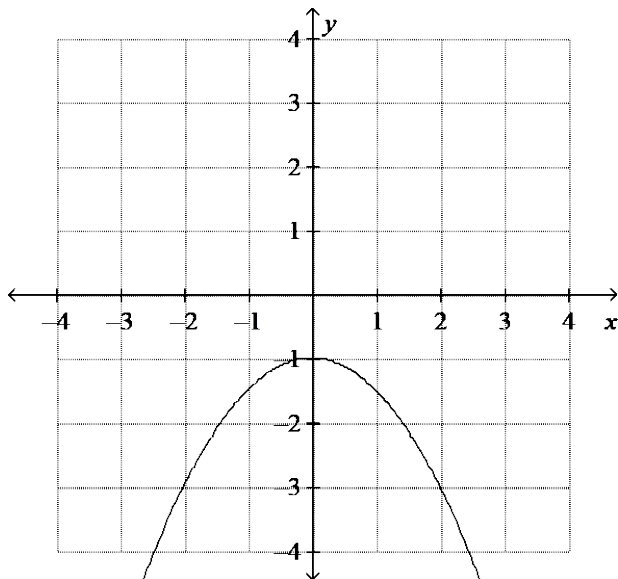


Algebra 1 MP 5 Exam Study Guide

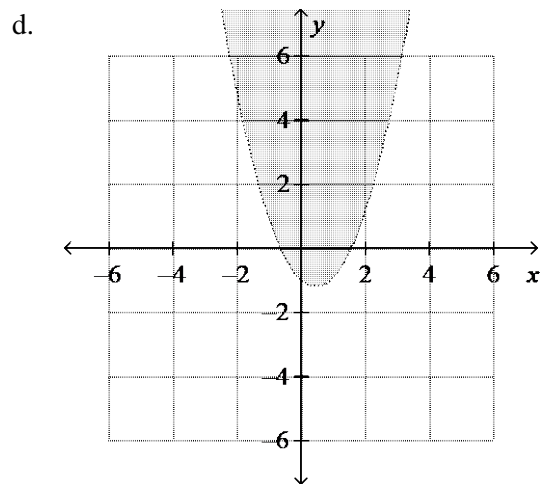
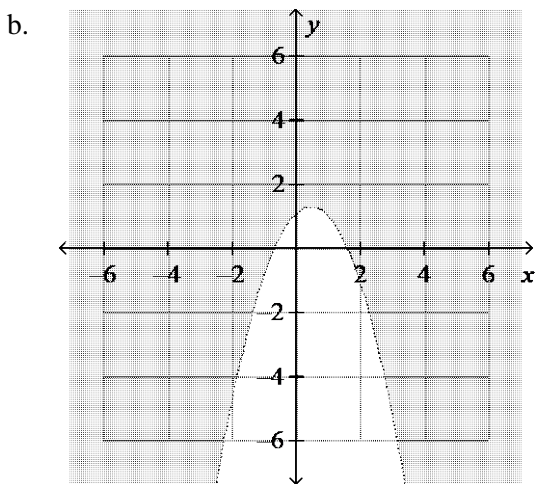
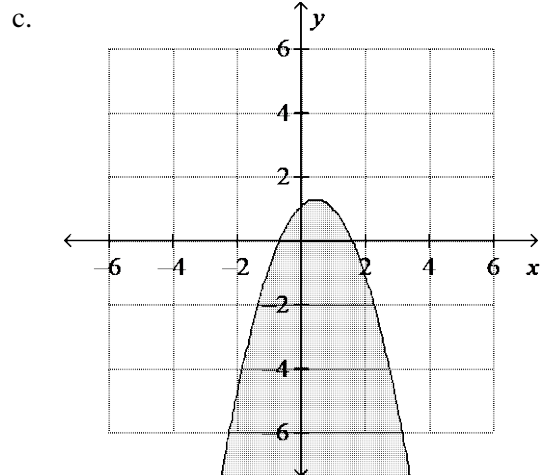
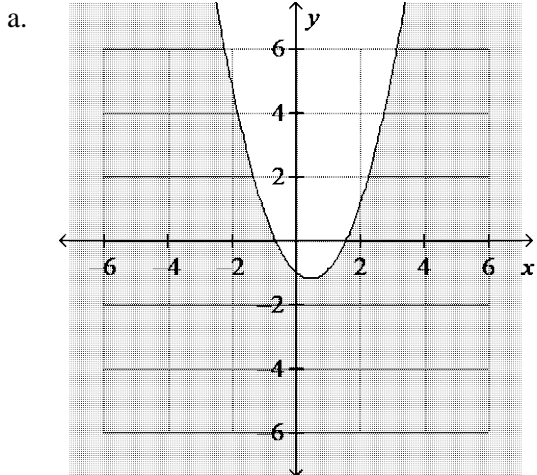
Multiple Choice

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

- ___ 1. Identify the vertex of the graph. Tell whether it is a minimum or maximum.



- a. $(0, -1)$; minimum
b. $(-1, 0)$; maximum
c. $(0, -1)$; maximum
d. $(-1, 0)$; minimum
- ___ 2. Which of the quadratic functions has the narrowest graph?
a. $y = -x^2$
b. $y = \frac{1}{4}x^2$
c. $y = 4x^2$
d. $y = \frac{1}{9}x^2$
- ___ 3. Which of the quadratic functions has the widest graph?
a. $y = \frac{1}{3}x^2$
b. $y = -4x^2$
c. $y = 0.3x^2$
d. $y = -\frac{4}{5}x^2$
- ___ 4. A parabola _____ has an axis of symmetry.
a. always
b. sometimes
c. never
- ___ 5. Graph $f(x) \leq x^2 - x - 1$.



___ 6. Simplify $\sqrt{\frac{144}{49}}$.

a. $\frac{144}{7}$

b. $\frac{12}{49}$

c. $\frac{49}{12}$

d. $\frac{12}{7}$

___ 7. The principal square root of a positive real number is _____ negative.

a. always

b. sometimes

c. never

___ 8. Is $\sqrt{\frac{5}{8}}$ rational or irrational?

a. rational

b. irrational

___ 9. Is $\sqrt{13}$ rational or irrational?

a. rational

b. irrational

___ 10. The expression $\sqrt{\frac{a}{b}}$ is _____ rational if a and b are integers and $b \neq 0$.

a. always

b. sometimes

c. never

___ 11. Between what two consecutive integers is $\sqrt{151}$?

- a. 11 and 12 b. 14 and 15 c. 12 and 13 d. 9 and 10

- ___ 12. The quadratic equation $x^2 + a = 0$, where $a > 0$, _____ has at least one real number solution.
 a. always b. sometimes c. never

Solve the equation by factoring.

- ___ 13. $15 = 8x^2 - 14x$
 a. $-5, \frac{3}{8}$ b. $-\frac{2}{5}, \frac{4}{3}$ c. $-3, \frac{5}{8}$ d. $-\frac{3}{4}, \frac{5}{2}$

- ___ 14. The expression $ax^2 - bx = 0$ _____ has the solution $x = 0$.
 a. always b. sometimes c. never

Solve the equation by completing the square. Round to the nearest hundredth if necessary.

- ___ 15. $3x^2 - 6x - 24 = 0$
 a. 2.65, 3 b. -30, 36 c. 4, -2 d. 7.58, -1.58

Use the quadratic formula to solve the equation. If necessary, round to the nearest hundredth.

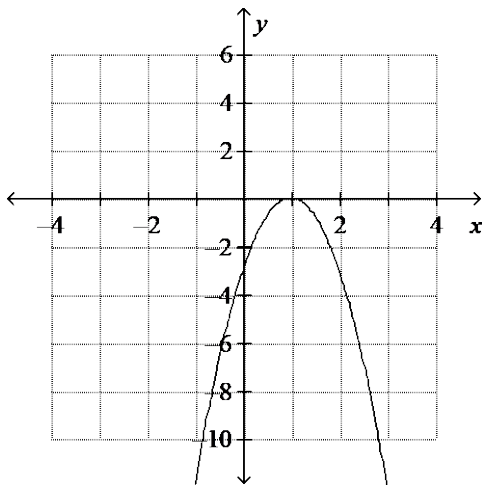
- ___ 16. $5y^2 - 8y = 2$
 a. 1.82, -0.22 b. 11.2, -9.6 c. 3.64, -0.44 d. 0.22, -1.82

- ___ 17. The solutions given by the quadratic formula are _____ integers.
 a. sometimes b. always c. never

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

- ___ 18. $7x^2 - 16x = 8$
 a. 0.42, -2.71 b. 2.71, -0.42 c. 35.43, -33.14 d. 5.42, -2.95

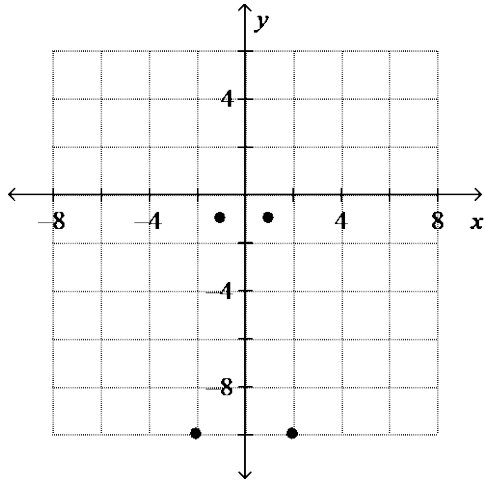
- ___ 19. For which discriminant is the graph possible?



- a. $b^2 - 4ac = -4$ b. $b^2 - 4ac = 3$ c. $b^2 - 4ac = 0$

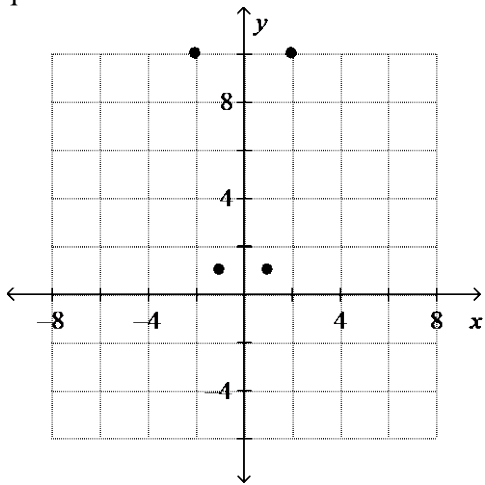
Find the number of real number solutions for the equation.

a.



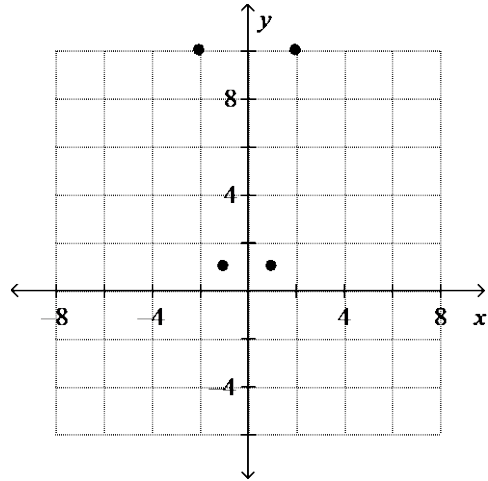
quadratic

b.



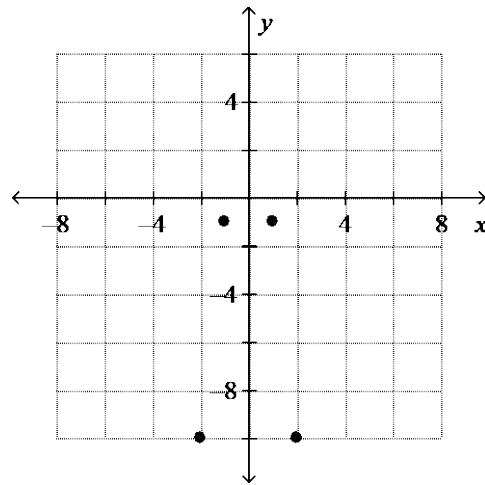
quadratic

c.



linear

d.



exponential

- ___ 24. In an exponential model, the y values ___ decrease as the x values increase.
 a. always b. sometimes c. never
- ___ 25. The equation $x^2 + n = 0$ ___ has at least one real number solution when $n > 0$.
 a. always b. sometimes c. never