Algebra 1 Chapter 9 Test Review

Graph each equation.

1. $y = -2x^2 + 4$

2. $y = -x^2$

3. $y = 3x^2$

4. $y = 2x^2 - 1$

5. $y = x^2 - 3$

6. $y = x^2 - 5x + 6$

7. $y \le -x^2 + 3$

Find the vertex and axis of symmetry of the graph of each function below:

8. $y = -2x^2 + 7$

Vertex: _____ axis of symm_____

9. $y = 5x^2 + 20x - 4$

Vertex: _____ axis of symm_____

State whether the number is *rational* or *irrational* and simplify.

10. $\frac{12}{36}$

11. $\sqrt{64}$

12. $\sqrt{75}$

13. What number will complete the square? $x^2 - 18x +$ _____

Solve each equation:

14. $(x+2)(x-9) = 0$

15. $x^2 - 25 = 0$

16. $2x^2 + 8 = 22$

17. Solve the equation by factoring:
$2x^2 + 3x - 35 = 0$

18. Solve the equation by completing the square: $x^2 + 6x - 10 = 0$

19. Find the exact value of x by using the quadratic formula: $3x^2 + 2x - 4 = 0$

20. Solve for x and give your answer to the nearest hundredth (2 decimals):
$3x^2 - 5x - 4 = 0$

Solve each equation:

21. $x^2 - 9x + 14 = 0$

22. $x^2 + 6x = 5$

23. $x^2 - 36 = 0$

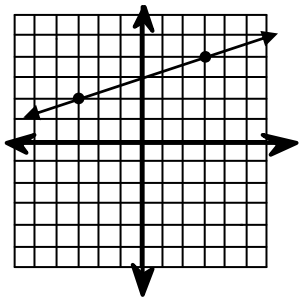
24. How many zeroes are there for the function $x^2 + 6x + 8 = 0$?

25. How many x-intercepts are on the graph of $y = x^2 - 12x + 36$?

26. How many solutions are there to the equation $2x^2 + 7x - 8 = 0$?

27. How many solutions are there to the equation $3x^2 - 2x + 8 = 0$?

28. What is the equation for the graph at the right?

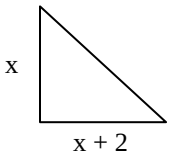


29. What is the slope of a line perpendicular to $y = \frac{2}{7}x + 6$?

30. Factor: $3x^2 - x - 24$

Extra Credit:

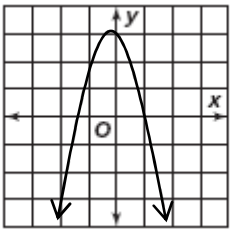
A. Find the base and height of the triangle at right whose area=12 sq.feet.



B. The equation $P = 0.0089t^2 + 1.1149t + 78.4491$ models the U.S. population, P, in millions since 1990, where t is the number of years since 1990. Use the equation to estimate the U.S. population in 2012.

Solutions:

1.



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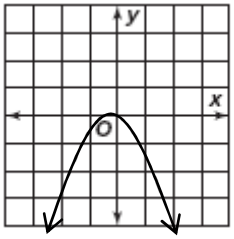

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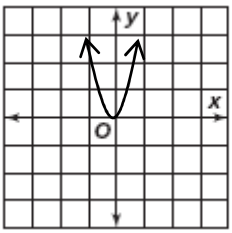

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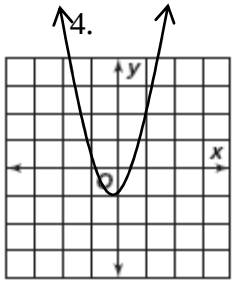

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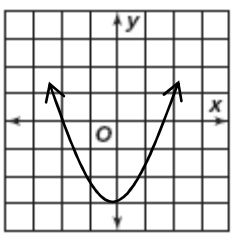

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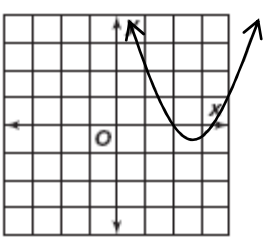

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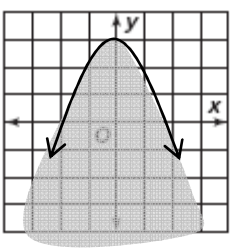

8. V: (0, 7) a.s. x = 0

9. V: (–2, –24) a.s. x = –2

10. $\frac{1}{3}$ rational

11. 8 rational

12. $3\sqrt{5}$ irrational

13. 81

14. –2, 9

15. ±5

16. $\pm\sqrt{7}$

17. $\frac{7}{2}$, –5

18. $-3\pm\sqrt{19}$

19. $\frac{-1\pm\sqrt{13}}{3}$

20. –0.59, 2.26

21. 7, 2

22. $-3\pm\sqrt{14}$

23. ±6

24. 2

25. 1

26. 2

27. 0

28. $y=\frac{1}{3}x+3$

29. $-\frac{7}{2}$

30. (3x + 8)(x – 3)

E.C.

A. base=4, height=6

B. 107.28 million