

1. Find the prime factorization of 84.

10. $x^2 - 2x - 24 = 0$.

2. Find the GCF of 54 and 12.

11. $3x^2 + 2x - 8 = 0$.

3. Find the GCF of $10a^3$ and $32a^2$.

4. Factor the polynomial $10y^3 + 24y^2 - 12y$.

12. $2x^2 + 7x + 6 = 0$.

5. Factor $5(x - 2) - 9x(x - 2)$.

Factor and solve:

6. $x^2 + 16x + 48 = 0$.

Solve using the Quadratic Formula

13. $42x^2 - x - 30 = 0$.

7. $x^2 + 11x + 24 = 0$.

8. $x^2 - 2x - 24 = 0$.

14. $-3x^2 + 26x - 16 = 0$.

9. $x^2 + 5x - 50 = 0$.

Multiply the binomials

15. $(x + 4)(x + 5)$

16. $(x - 6)(x - 8)$

17. $(3x - 6)(4x + 5)$

What is the discriminant? How many solutions?

18. $x^2 + 25 = 0$

19. $x^2 - 11x + 28$

20. $x^2 + 8x + 16 = 0$

1. Graph the equation, fill in the table and answer the following questions:

$$y = -2x^2 + 4x + 6$$

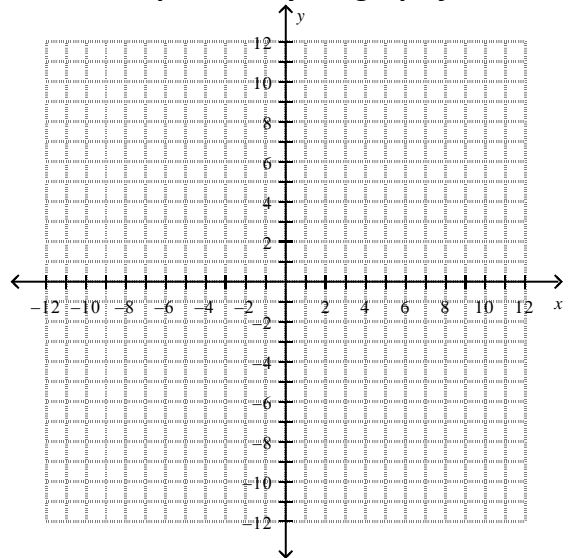
- $a = \underline{\hspace{2cm}}$ $b = \underline{\hspace{2cm}}$ $c = \underline{\hspace{2cm}}$
- Does the graph open up or down? $\underline{\hspace{2cm}}$
- The y intercept is: $\underline{\hspace{2cm}}$
- The line of symmetry is: $x = \underline{\hspace{2cm}}$
- The vertex is $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$
- Make the table of values and graph the 5 points (the vertex, the y intercept and 3 other points. Two must be on each side of the vertex.)

Show all work!!

- What are the zeros of this function?
 $\underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$. **Mark and label**

x	y

Label all points on your graph for credit!!



42) Which ordered pair represents one of the roots of the function $f(x) = 2x^2 + 3x - 20$?

F $(-\frac{5}{2}, 0)$

H $(-5, 0)$

G $(-4, 0)$

J $(-20, 0)$

6) Nancy threw a ball upward from the roof of a 50-foot-high building at an initial velocity of 40 feet per second. The table shows the relationship between the time elapsed and the ball's height above the ground.

Time After Nancy Threw the Ball (seconds)	Height of the Ball Above the Ground (feet)
0	50
0.5	66
1.0	74
1.5	74
2.0	66
2.5	50

If the height of the ball is a quadratic function of time, between what times did the ball reach a height of 70 feet?

F Between 0 seconds and 0.5 second

G Between 1 second and 1.5 seconds

H Between 0.5 second and 1 second and between 1.5 seconds and 2 seconds

J Between 1 second and 1.5 seconds and between 1.5 seconds and 2 seconds

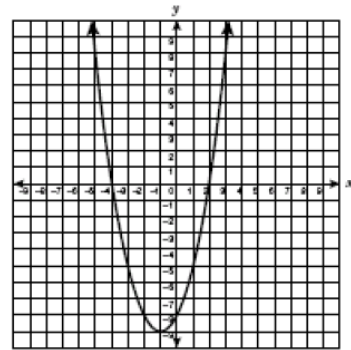
40) What are the roots of the function graphed below?

F $(-1, -9)$ and $(0, -8)$

G $(0, -4)$ and $(2, 0)$

H $(-4, 0)$ and $(2, 0)$

J $(0, 2)$ and $(0, -4)$



25) Part of the graph of a quadratic equation is shown below.

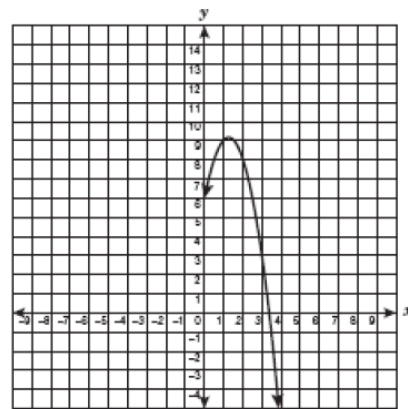
If the line of symmetry for this quadratic equation is $x = 1.25$, between which two integers will the other part of the graph intersect the x -axis?

A -4 and -3

B -3 and -2

C -2 and -1

D -1 and 0



17) What is the effect on the graph of the equation $y = -4x^2$ when the equation is changed to $y = 4x^2$?

A The graph of $y = 4x^2$ is translated 8 units down.

B The graph of $y = 4x^2$ is a reflection of $y = -4x^2$ across the x -axis.

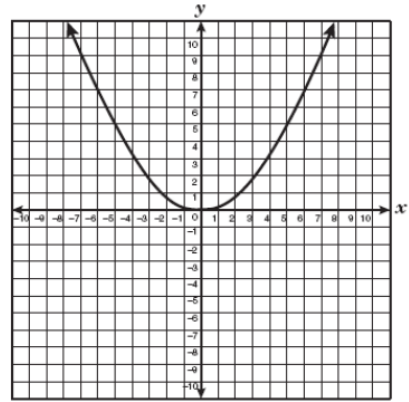
C The graph of $y = 4x^2$ is translated 8 units up.

D The graph of $y = 4x^2$ is a reflection of $y = -4x^2$ across the y -axis.

5) The graph of $y = 0.2x^2$ is shown below.

Which of the following equations represents a graph that is wider than the graph of $y = 0.2x^2$?

- A $y = 0.3x^2$
- B $y = 0.2x^2 + 1$
- C $y = 0.1x^2$
- D $y = 0.2x^2 - 1$

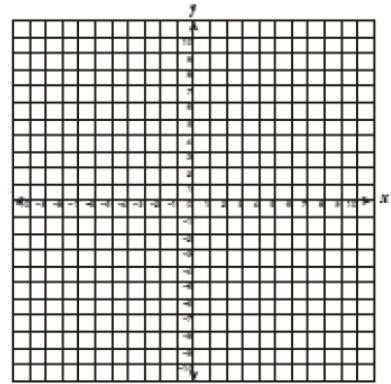


14) Barbara graphs a family of equations of the form $y = ax^2 + 1$. How does each new graph compare to the previous graph as Barbara increases the value of a from $\frac{1}{2}$ to 1 to $1\frac{1}{2}$ and finally to 2?

- F Each new graph is above the previous graph.
- G Each new graph is wider than the previous graph.
- H Each new graph is narrower than the previous graph.
- J Each new graph is to the right of the previous graph.

52) When graphed, which function would appear to be shifted 2 units up from the graph of $f(x) = x^2 + 1$?

- F $g(x) = x^2 - 1$
- G $g(x) = x^2 + 3$
- H $g(x) = x^2 - 2$
- J $g(x) = x^2 + 2$



QUADRATICS TEST2 REVIEW ANSWERS

QUADRATICE GRAPH:

1. $a=-2$, $b=4$, $c=6$, 2. graph opens down
3. y-incpt =6, 4. line of symm. $x= 1$
4. vertex (1, 8), 7. zersx $\{-1, 3\}$

SHORT ANSWER

1. ANS:

2, ,2, 3, 7

OBJ: 8-1.1 Writing Prime Factorization

2. ANS:

6

OBJ: 8-1.2 Finding the GCF of Numbers

3. ANS:

$2a^2$

OBJ: 8-1.3 Finding the GCF of Monomials

4. ANS:

$2y(5y^2 + 12y - 6)$

OBJ: 8-2.1 Factoring by Using the GCF

5. ANS:

$(x - 2)(5 - 9x)$

OBJ: 8-2.3 Factoring Out a Common Binomial Factor

6. ANS:

$(x + 4)(x + 12)$ $x=-4, -12$

OBJ: 8-3.1 Factoring Trinomials by Guess and Check

7. ANS:

$(x + 3)(x + 8)$ $x = -3, -8$

OBJ: 8-3.2 Factoring $x^2 + bx + c$ When c is Positive

8. ANS: $(x - 6)(x + 4)$, $x = 6, -4$

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

9. ANS: $(x - 5)(x + 10)$, $x = 5, -10$

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

10. ANS: $(x - 6)(x + 4)$, $x = 6, -4$

OBJ: 8-3.3 Factoring $x^2 + bx + c$ When c is Negative

11. ANS: $x = -2$, $\frac{4}{3}$

$(x + 2)(3x - 4)$

OBJ: 8-4.1 Factoring $ax^2 + bx + c$ by Guess and Check

12. ANS: $x = -2$, $-\frac{3}{2}$

$(x + 2)(2x + 3)$

OBJ: 8-4.2 Factoring $ax^2 + bx + c$ When c is Positive

13. ANS: $(6x + 5)(7x - 6) \quad x = -\frac{5}{6}, \frac{6}{7}$
 $(6x + 5)(7x - 6)$

OBJ: 8-4.3 Factoring $ax^2 + bx + c$ When c is Negative

14. ANS: $x = 8, \frac{2}{3}$
 $-(x - 8)(3x - 2)$

OBJ: 8-4.4 Factoring $ax^2 + bx + c$ When a is Negative

15. ANS:
 $x^2 + 9x + 20$

16. ANS:
 $x^2 - 14x + 48$

17. ANS:
 $12x^2 - 9x - 30$

18. -100; no real solutions

19. 9; 2 real solutions

20. 0; 1 real solution

TAKS

42. G

6. G

40. H

25. D

17. D

14. H

52. G