

Unit 10 Test Review

Name _____ Per _____

Match each form of quadratic equation to what it best shows.

1. Vertex Form _____	a. y-intercept
2. Factored Form _____	b. x-intercepts
3. Standard Form _____	c. vertex and axis of symmetry

4. Write the quadratic formula.

What is the value of the discriminant, and how many real solutions does it have?

5. $6x^2 - 3x - 3 = 0$	6. $3x^2 - 4x = -7$
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Convert each equation below into vertex form. Also, identify the vertex.

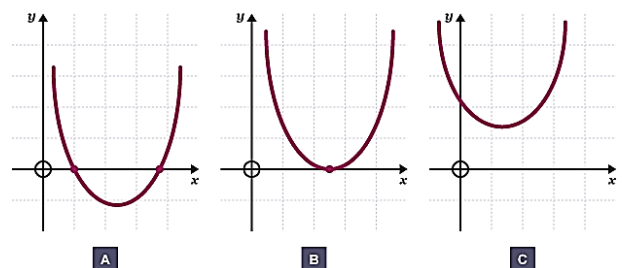
7. $y = x^2 + 16x + 70$	8. $y = -7x^2 + 14x + 10$
Vertex form: _____ Vertex: _____	Vertex form: _____ Vertex: _____

Match each type of discriminant with its appropriate graph.

9. Positive discriminant _____

10. Negative discriminant _____

11. Discriminant is zero _____



Solve the following quadratic equations using all method (factoring, quadratic formula, completing the square).

12. $4a^2 + 3a - 14 = 0$

13. $10x^2 - 10x + 9 = 0$

14. $v^2 + 8v - 28 = -8$

15. $8v^2 + 4v = 5$

16. $-3x^2 + 16x + 4 = -9x^2 + 6 + 12x$

17. $p^2 - 12p + 21 = 11$

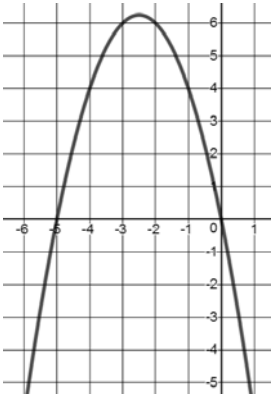
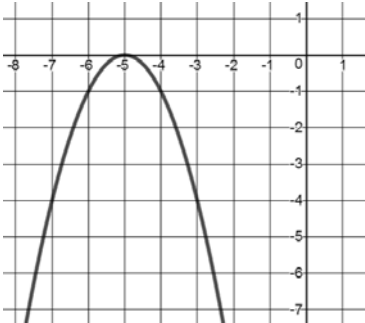
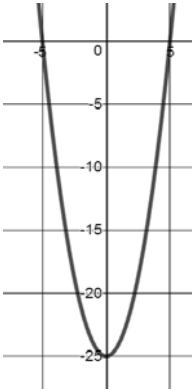
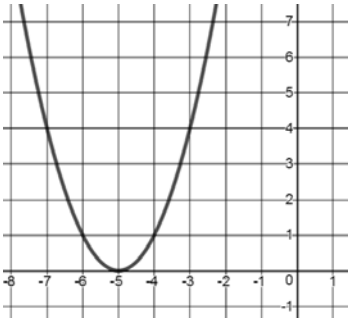
18. $2x^2 + 10x - 7 = 0$

19. $m^2 - 15m = -5m + 19$

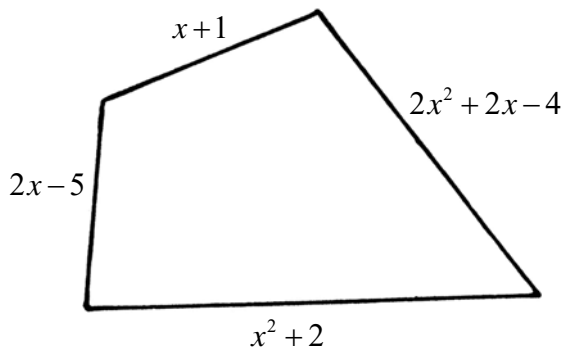
Complete the perfect square trinomial then factor.

<p>20. $x^2 + 12x + \underline{\hspace{2cm}}$</p> <p>Factored form: $\underline{\hspace{2cm}}$</p>	<p>21. $x^2 - 30x + \underline{\hspace{2cm}}$</p> <p>Factored form: $\underline{\hspace{2cm}}$</p>	<p>22. $x^2 + 14x + \underline{\hspace{2cm}}$</p> <p>Factored form: $\underline{\hspace{2cm}}$</p>
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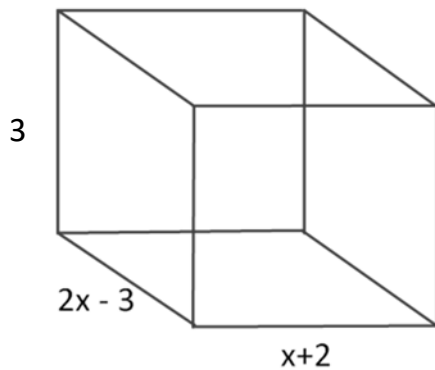
Match each graph with the appropriate equation and **EXPLAIN** how you know.

<p>23. $y = -(x+5)^2$</p>	<p>a.</p> 
<p>24. $y = x^2 + 10x + 25$</p>	<p>b.</p> 
<p>25. $y = x^2 - 25$</p>	<p>c.</p> 
<p>26. $y = -x(x+5)$</p>	<p>d.</p> 

27. The perimeter of the quadrilateral shown is 94 meters. What is the value of x ? What is the base?



28. Write an equation to represent the volume (V) of the box shown below in 3 unique ways.



29. Jeanine used the quadratic formula to solve the quadratic equation: $2x^2 + 6x - 4 = 0$. Decide whether she is right or wrong. If she is correct, write "correct". If she is incorrect, circle the error and redo the problem.

$$x = \frac{-6 \pm \sqrt{(6)^2 - 4(2)(-4)}}{2(2)}$$

$$x = \frac{-6 \pm \sqrt{36 - 32}}{4}$$

$$x = \frac{-6 \pm \sqrt{4}}{4}$$

$$x = \frac{-6 \pm 2}{4}$$

$$x = \frac{-4}{4}, \frac{-8}{4}$$

$$x = -1, -2$$

Identify the form of each quadratic, then find the x-intercepts.

<p>30. $f(x) = -3(x+5)(2x-3)$</p> <p>Form: _____</p>	<p>31. $f(x) = -\frac{3}{2}(x+7)^2 + 12$</p> <p>Form: _____</p>
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Answer Key

1. c	2. b	3. a
4. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	5. 81, two real solutions	6. -68, zero real solutions
7. $x = (x+8)^2 + 6$ (-8,6)	8. $y = -7(x-1)^2 + 17$ (1,17)	9. A
10. C	11. B	12. $a = \frac{-3 \pm \sqrt{233}}{8}$
13. No Solution	14. $v = 2, -10$	15. $v = \frac{-1 \pm \sqrt{11}}{4}$
16. $x = \frac{1}{3}, -1$	17. $p = 6 \pm \sqrt{26}$	18. $x = \frac{-5 \pm \sqrt{39}}{2}$
19. $m = 5 \pm 2\sqrt{11}$	20. 36, $(x+6)^2$	21. 225, $(x-15)^2$
22. 49 $(x+7)^2$	23. b, since the parabola is concave down and the only x-intercept is -5	24. d, since the parabola is concave up and the only x-intercept is -5
25. c, since the parabola is concave up and the y-intercept is -25	26. a, since the parabola is concave down and the x-intercepts are 0 and -5	27. $x = 5$ Base = 27 meters
28. There are many correct answers, some of them are: $V = 3(2x-3)(x+2)$, $V = (6x-9)(x+2)$, $V = 6x^2 + 3x - 18$, $V = (2x-3)(3x+6)$, $V = (2x-3)(x+2)3$, $V = 3(2x^2 + x - 6)$		
29. She is incorrect (the error is that the -32 in the second step should be a positive 32). $x = \frac{-3 \pm \sqrt{17}}{2}$	30. factored form x-ints = $(-5, 0) \left(\frac{3}{2}, 0 \right)$	31. vertex form x-ints = $(-7 + 2\sqrt{2}, 0) (-7 - 2\sqrt{2}, 0)$