Algebra II & Trigonometry Name _____
Exam Review problems
Chapter 5

1. Solve $2x^2 - 7 = 43$

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2. Factor $2x^2 + 28x - 30$

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3. Solve the following by factoring.

(a) $x^2 + 11x + 24 = 0$ (b) $3x^2 - 57x + 180 = 0$

_____ _____

4. Fill in the blank with the number that will make the quadratic a perfect square: $x^2 - 20x +$ ____

5. Solve each equation by completing the square. In (b) leave your answer as a radicals, not a decimal

(a) $x^2 + 10x + 9 = 0$ (b) $x^2 - 8x + 11 = 0$

_____ _____

6. The parabola $y = 3(x - 8)^2 + 7$ is in vertex form. What is its vertex?

_____

7. Write the parabola $y = 2x^2 + 8x + 5$ in vertex form. I'd start by finding its vertex.

_____

8. Write the parabola $y = 2x^2 + 8x - 64$ in factored form.

9. Find the discriminant of each equation. Decide if each has 2 real solutions, 1 real solution, or 2 complex ones

(a) $x^2 + 4x + 4 = 0$ D= _____ (b) $2x^2 - 6x + 5 = 0$ D= _____

_____ _____

10. Simplify the following

(a) $(7i)\cdot(3i)$ (b) $(-3i)^2$ (c) $\sqrt{-49}$ (d) $3(i-7)-2(2-5i)$ (e) $(2-3i)(4-3i)$

_____ _____ _____ _____ _____

11. Use the quadratic formula to solve each equation. Simplify completely. Include complex solutions.

(a) $6x^2 - x - 12 = 0$ (b) $2x^2 - 6x + 5 = 0$

_____ _____

12. For each parabola below, find the x intercepts, y-intercept, and the vertex.

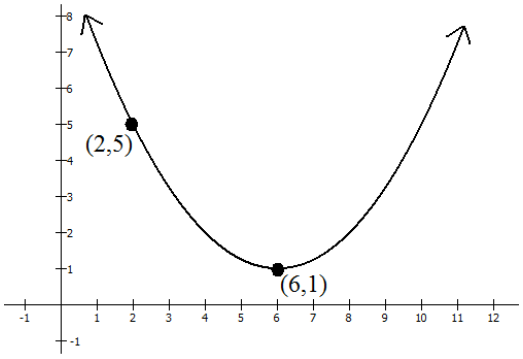
(a) $y = x^2 - 2x - 8$ (b) $y = (x-2)^2 - 9$ (b) $y = (x-2)^2 - 9$

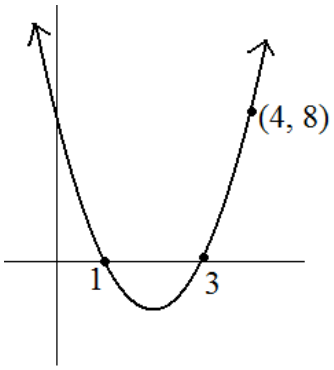
vertex _____ y-int _____ vertex _____ y-int _____ vertex _____ y-int _____

x-int_____ _ _____ x-int_____ _____ x-int_____ _ _____

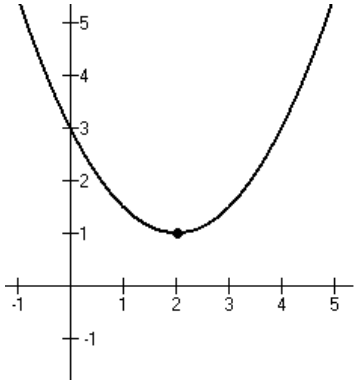
13. Solve the system $\begin{cases} y = 49 \\ y = (2x+5)^2 \end{cases}$

14. Write an equation for each parabola below. You may use the form of your choice (vertex, factored, standard) However, for each there is definitely a best choice.





15. Which equation best matches the graph to the right?



A. $y=(x-2)^2+1$
B. $y=(x-2)^2+3$
C. $y=3(x-2)^2+1$
D. $y=\frac{1}{2}(x-2)^2+1$

16. Write the equation of the parabola with *x*-intercepts 3 and -4, and with *y*-intercept 6.
(A) $y=(x-3)(x+4)$
(B) $y=(x-3)(x+4)$ +6
(C) $y=6(x-3)(x+4)$
(D) $y=\frac{1}{2}(x-3)(x+4)$
(E) $y=-\frac{1}{2}(x-3)(x+4)$

17. The *y*-intercept of the parabola $y=2(x-3)^2+5$ is …

A. 5 B. 14 C. 18 D. 23

18. The vertex of the parabola $y-2=(x-5)^2$ is…

A. $(5,-2)$ B. $(5,2)$ C. $(-5,2)$ D. $(-5,-2)$

19. The vertex of the parabola $y=2x^2-4x+5$ is…

A. $(0,5)$ B. $(2,5)$ C. $(1,3)$ D. $(-1,11)$ E $(-1,3)$

20. The y-intercept of $y=2(x-3)(x-5)$ is

A. 4 B. -3 C. 3 D. 30