Math II
Chapter 4 Retake Review

Name_____
Date_____Period_____

1. What is the vertex of $f(x) = 2(x - 3)^2 - 6$?

2. What are the x-intercepts of $f(x) = 2(x - 1)(x + 3)$?

3. Given $f(x) = ax^2 + bx + c$, what does the $x = -b/2a$ represent? Could it be more than one thing?

4. Factor the following equations completely.
   a. $x^2 - 7x + 10$
   b. $12x^2 + 19x - 18$
   c. $x^2 - 11x + 30$
   d. $n^2 - 64$
   e. $2x^2 + 7x - 15$
   f. $6t^2 + 23t + 20$

5. Solve the following equations.
   a. $x^2 + 12x - 45 = 0$
   b. $9x^2 + 6x + 1 = 0$
   c. $x^2 - 3x - 40 = 0$
   d. $r^2 - 13r + 42 = 0$
   e. $2w^2 + 13w - 7 = 0$
   f. $10y^2 + 11y - 6 = 0$

6. What is the simplified form of the expression $\sqrt{1800}$?

7. What is the simplified form of the expression $\sqrt{24} \cdot \sqrt{30}$?

8. Solve $2(m - 7)^2 = 16$

9. Solve $(x + 2)^2 - 12 = 36$

10. Solve $5(x - 2)^2 + 40 = 0$

11. Solve $2(x - 3)^3 + 64 = 0$

12. Multiply $(3 - i)(-2 + 4i)$

13. Find the quotient.
   a. $\frac{2 + i}{3 + 4i}$
   b. $\frac{3 + i}{2 - 3i}$

14. Write the equation $y = 2x^2 + 12x + 5$ in vertex form.

$y = a(x - h)^2 + k$

15. Write the quadratic function that has a vertex at (2, 7) and passes through (4, 2).

16. Write the quadratic function that has a vertex at (-3, -2) and passes through (1, -10)

17. Write the equation of a parabola that has x-intercepts of -3 and 2 and passes through the point (3, 12)

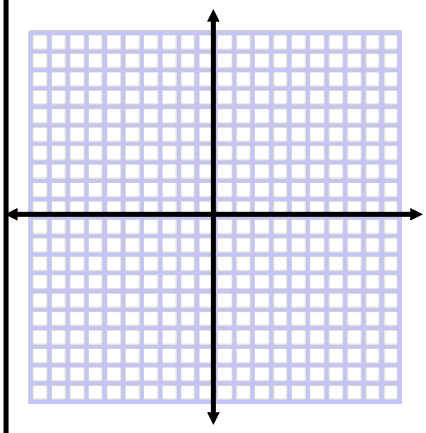
18. Write the equation of a parabola that has x-intercepts of -7 and -3 and passes through the point (-1, 12)

19. Use the discriminant to describe the types of solutions for the equation $2x^2 - 7x + 9 = -4x + 1$.

20. Solve: $5x^2 + 11 = 14$

Graph the following quadratics: (show work)

21. $y = 2x^2 + 12x + 15$



a) Graph

b) vertex: (,)

c) axis of symmetry: x =

d) x-intercept:

e) y-intercept:

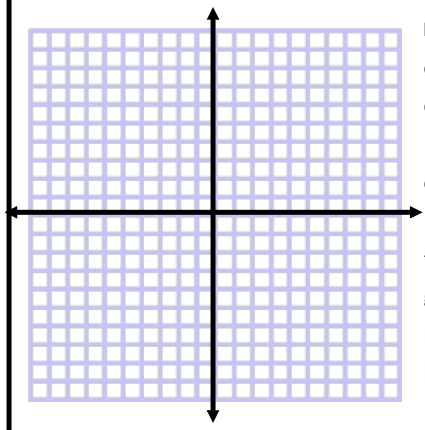
f) domain:

g) range:

h) increasing and decreasing

i) end behavior

22. $y = -(x + 3)^2 + 5$



a) Graph

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c) axis of symmetry: x =

d) x-intercept:

e) y-intercept:

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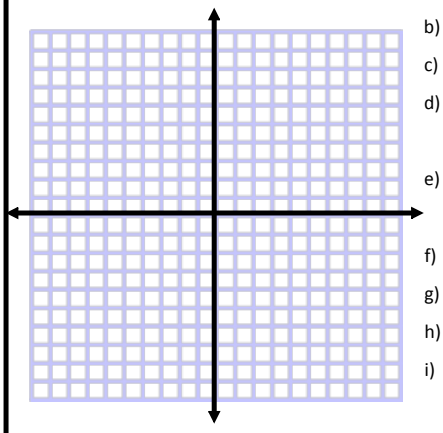
23. $y = 2(x + 4)(x - 2)$



a) Graph

b) vertex: (,)

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26. Solve for x three times: by factoring, by completing the square and by the quadratic formula

$$\mathbf{x^2 - 12x + 35 = 0}$$

Factoring	completing the square	quadratic formula

27. Solve for x three times: by factoring, by completing the square, and by the quadratic formula

$$\mathbf{4x^2 - 3x - 10 = 0}$$

Factoring	completing the square	quadratic formula