

RIDDLE
PRE AP ALGEBRA 2
TEST #2 REVIEW

NAME : _____

Graph the following quadratics:

1) $y = x^2 + 6x + 8$

vertex (,)

maximum or minimum

roots: $x = \underline{\hspace{2cm}}$, $x = \underline{\hspace{2cm}}$

2) $f(x) = x^2 + 3$

vertex (,)

maximum or minimum

roots: $x = \underline{\hspace{2cm}}$, $x = \underline{\hspace{2cm}}$

3) $y = (x - 2)^2$

vertex (,)

maximum or minimum

roots: $x = \underline{\hspace{2cm}}$, $x = \underline{\hspace{2cm}}$

4) $f(x) = 2x^2 - 6x + 4$

vertex (,)

maximum or minimum

roots: $x = \underline{\hspace{2cm}}$, $x = \underline{\hspace{2cm}}$

Solve by FACTORING.

5) $5x^2 - 20x = 0$

6) $4x^2 - 25 = 0$

7) $c^2 - 4c - 12 = 0$

8) $4x^2 + 4x - 3 = 0$

Find the value of the discriminant and describe the nature of the roots of each quadratic equation. SOLVE!!!!!!

9) $x^2 + 7x + 13 = 0$

10) $9x^2 + 42x + 49 = 0$

11) $2x^2 - 5x = 3$

12) $18x^2 = 9x + 45$

Find the exact solutions for each equation by COMPLETING THE SQUARE.

13) $x^2 - 12x = 45$

14) $x^2 - 6x + 11 = 0$

15) $x^2 + 7x + 5 = 0$

16) $3x^2 + 5x = 15$

FACTOR each of the following polynomials.

17) $y^3 - 27$

18) $a^3 + 343$

19) $5n^3 - 40$

20) $125x^3 + 1$

Simplify.

21) $\sqrt{-49}$

23) $4\sqrt{-32}$

25) $(-3i)(7i)$

27) i^7

29) $(5 + 6i) - (2 + 7i)$

31) $(3 - 10i) - (-6 + 12i)$

33) $3(8 - 4i)$

35) $(2 + 4i)(2 - 4i)$

37) $\frac{5-2i}{i}$

39) $\frac{8}{3-2i}$

22) $\sqrt{-\frac{25}{64}}$

24) $\sqrt{-15} \cdot \sqrt{-25}$

26) $(3i)^2$

28) i^{22}

30) $(7 + 12i) + (4 + 9i)$

32) $(2 - 15i) + (-9 - 7i)$

34) $(5 + 11i)(2 - i)$

36) $(3 - 5i)^2$

38) $\frac{2+9i}{5i}$

40) $\frac{3-2i}{6+7i}$

Solve each inequality.

41) $y > x^2 - 2x + 1$

42) $x^2 - 2x - 8 \leq 0$

GRAPH. Give the domain and range.

43) $f(x) = \begin{cases} x+1, & \text{if } -4 < x \leq 1 \\ -2x+3, & \text{if } 1 < x \leq 3 \end{cases}$

44) $f(x) = \begin{cases} |x+2| - 3, & \text{if } -3 < x \leq 1 \\ 2x+1, & \text{if } 1 < x \leq 3 \end{cases}$

45) $y = -3|x - 3| + 3$

46) $f(x) = \frac{1}{2}(-x + 2)^2 - 2$