**Algebra 1: 12.1-12.6 Test Review** **Name _____ Period _____**
**Polynomials and Quadratics**

**Write each in standard form. Decide if it is a monomial, binomial, or trinomial. Tell the degree of the polynomial as well.**

1) $4x-12+x^2$ 2) $10-3x^3$ 3) $8x^5$

**Is each of the following a polynomial? If not, then WHY?**

4) $6m^4-4x$ 5) $3x^2+\frac{6}{x^3}-18$ 6) $4\sqrt[3]{x}+5x^2$

**Simplify each expression using addition or subtraction.**

7) $(5x^3 - 7x^2 + 12) + (-x^3 - 10x^2 + 4)$ 8) $(3x^2 + 6x - 10) - (4x^2 + x - 8)$

**Simplify each product using the Distributive Property.**

9) $-3x(x - 2)$ 10) $2x(3x^2 - 3x + 7)$ 11) $-(4n - 10)$

**Simplify each product using one of the following methods: FOIL, Distributive Property or Multiplication Tables.**

12) $(x + 6)(2x - 4)$ 13) $(2x - 1)(2x - 5)$

**Simplify each product by using the Distributive Property or a Multiplication Table.**

14) $(x + 2)(x^2 - x + 7)$ 15) $(2n + 4)(n^2 - 3n - 6)$

**Factor out the GCF of each polynomial.**

16) $4x^3 + 4x^2 + 20x$

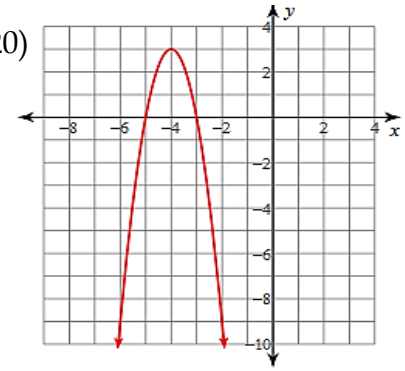
17) $2p + 24$

18) $3x^2 - 9x$

19) What do the solutions to a quadratic equation represent on a graph?

**Given each graph, what are the zeros?**

20)

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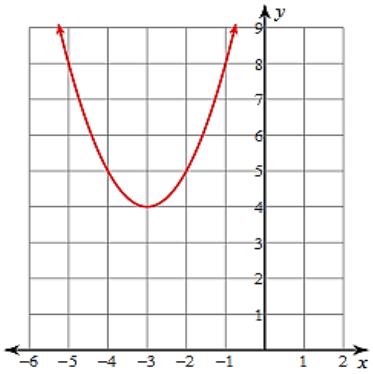


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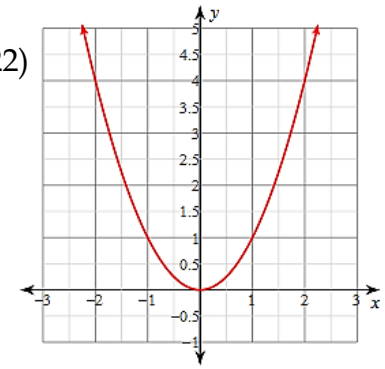


**Solve each quadratic equation by factoring. (NORMAL factoring problems)**

23) $x^2 + 12x + 35 = 0$

24) $w^2 - 11w + 24 = 0$

25) $a^2 - 4a = 12$

26) $a^2 + 7a = 0$

27) $2x^2 + 22x + 48 = 0$

28) $5m^2 - m - 6 = 0$

**Solve each quadratic using the difference of two squares, if possible.**

29) $a^2 - 16 = 0$

30) $x^2 - 81 = 0$

31) $9a^2 - 1 = 0$

32) $x^2 + 25 = 0$

33) $2x^2 - 72 = 0$

34) $4x^2 - 100 = 0$

**Solve each perfect square trinomial equation.**

35) $n^2 - 6n + 9 = 0$

36) $x^2 + 10x + 25 = 0$

37) $n^2 + 20n + 100 = 0$

38) $25x^2 - 40x + 16 = 0$

39) $9x^2 + 6x + 1 = 0$

40) $16x^2 - 24x + 9 = 0$

**Simplify each by extracting the perfect square to find an exact solution.**

41) $\sqrt{40}$

42) $\sqrt{32}$

43) $\sqrt{45}$

**Solve each equation by taking the square root of each side. Round to the nearest tenth if necessary.**

44) $n^2 = 25$

45) $x^2 = 40$

46) $2x^2 = 72$

47) $x^2 + 3 = 45$

48) $x^2 + 10 = 80$

49) $x^2 - 9 = 40$

50) $(x-9)^2 = 32$

51) $(x+2)^2 = 36$

52) $(x-8)^2 = 14$