Algebra 1: 12.1-12.4 Quiz Review **Name** _____ **Period** _____
SHOW ALL YOUR WORK!

Write each polynomial in standard form. Determine if it is a monomial, binomial, or trinomial. State the degree of the polynomial.

1) $-15x+2x^2$

$2x^2-15x$
binomial
degree: 2

2) $-15x+2-3x^2$

$-3x^2-15x+2$
trinomial
degree: 2

3) $5x^1$

$5x$
monomial
degree: 1

Determine whether each expression is a polynomial. If it is NOT a polynomial, explain WHY.

4) $6m^{-4}$

not a polynomial
there is a negative exponent

5) $3x^2-\sqrt{x}$

not a polynomial
an exponent can be written as a fraction

6) $4x^2+5$

polynomial

Simplify each expression using addition or subtraction.

7) $(2t^3-6t^2+9)+(t^3-4t^2-8)$

$3t^3-10t^2+1$

8) $(8k^3+3k^2-8k)-(-4k^3+k)$

$12k^3+3k^2-9k$

Determine the product of the polynomials using the Distributive Property.

9) $2x(x-4)$

$2x^2-8x$

10) $2x(x^2+4x-3)$

$2x^3+8x^2-6x$

11) $-(n^2+2n-7)$

$-n^2-2n+7$

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

12) $(x+4)(2x-4)$

$2x^2+4x-16$

13) $(2x+1)(3x-3)$

$6x^2-3x-3$

Determine the product using either the Distributive Property or Multiplication Tables.

14) $(x-2)(x^2-3x+4)$

$x^3-3x^2+4x-2x^2+6x-8$

$x^3-5x^2+10x-8$

15) $(2c+3)(c^2-5c-8)$

$2c^3-10c^2-16c+3c^2-15c-24$

$2c^3-7c^2-31c-24$

Factor out the GCF for each polynomial.

16) $\frac{y^3}{y} + \frac{2y^2}{y} + \frac{10y}{y} = y^2 + 2y + 10$

$y(y^2 + 2y + 10)$

17) $\frac{2q}{2} + \frac{18}{2} = q + 9$

$2(q + 9)$

18) $\frac{2x^3}{2x} - \frac{12x}{2x} = x^2 - 6$

$2x(x^2 - 6)$

Factor each polynomial. Remember to factor out the GCF first, if possible.

19) $x^2 - 2x - 8$

$(x - 4)(x + 2)$

20) $\frac{5k^2}{5} + \frac{5k}{5} - \frac{10}{5} = K^2 + K - 2$

$K^2 + K - 2 = (K + 2)(K - 1)$

$5(K + 2)(K - 1)$

21) $3x^2 - 13x + 10$

$(3x - 10)(x - 1)$

SOLVE each quadratic equation by factoring.

22) $x^2 + 10x + 24 = 0$

$(x + 6)(x + 4) = 0$

$x = -6$ or $x = -4$

23) $w^2 - 13w + 40 = 0$

$(w - 5)(w - 8) = 0$

$w = 5$ or $w = 8$

24) $a^2 - 2a - 15 = 0$

$(a - 5)(a + 3) = 0$

$a = 5$ or $a = -3$

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

$(n - 3)(n - 3) = 0$

or

$(n - 3)^2$

$n = 3$

26) $\frac{5x^2}{5x} + \frac{10x}{5x} = 0$

$x + 2$

$5x(x + 2) = 0$

$x = 0$ or $x = -2$

27) $3m^2 + 16 = -10m$

$3m^2 + 14m + 16 = 0$

$(m + 2)(3m + 8) = 0$

$m = -2$ or $m = -\frac{8}{3}$

28) What do the solutions to a quadratic equation represent <u>on a graph</u>?

x-intercepts