

Name: key Class: \_\_\_\_\_

Math 2: Unit 1 Test Review Sheet

**Part 1: Adding and Subtracting Polynomials** – Add or subtract the polynomials and write answer in standard form.

1.  $(13x^2 + 3x - 5) - (3x^2 + 2x - 5)$

2.  $(6x - 3 + 4x^2) + (2x^2 - 2x + 4)$

$10x^2 + x$

$6x^2 + 4x + 1$

**Part 2: Multiplying Polynomials** – multiply the polynomials and write answer in standard form.

3.  $(5x + 4)(2x^2 - 3x - 1)$

4.  $(3x - 4y)(7x - 6y)$

$10x^3 - 7x^2 - 17x - 4$

$21x^2 - 46xy + 24y^2$

**Part 3: GCF** – factor out the GCF and write what is left over.

5.  $8x^3 - 32x$

6.  $16x^5y^3 - 4x^2y + 16x^4y^2$

$8x(x^2 - 4)$

$4x^2y(4x^3y^2 - 1 + 4x^2y)$

**Part 4: Factoring** – Use the X-Box or another method to **factor** each polynomial.

7.  $2x^2 - 5x - 12$

8.  $x^2 + 6x - 16$

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

$(x + 8)(x - 2)$

9.  $5x^2 + 14x + 8$

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

$(5x + 4)(x + 2)$

$(3x - 4)(x - 2)$

**Part 5: Solving Quadratic Equations – Factor the polynomials to solve for x.**

11.  $x^2 - 7x - 30 = 0$

$$(x-10)(x+3) = 0$$

$$\boxed{x = 10 \quad x = -3}$$

12.  $5x^2 + 4x = 12$

$$5x^2 + 4x - 12 = 0$$

$$(5x-6)(x+2) = 0$$

$$\boxed{x = \frac{6}{5} \quad x = -2}$$

13.  $12x^2 + 4x - 3 = 2$   $12x^2 + 4x - 5 = 0$

$$(6x+5)(2x-1) = 0$$

$$\boxed{x = -\frac{5}{6} \quad x = \frac{1}{2}}$$

14.  $x^2 = 21x + 22$   $x^2 - 21x - 22 = 0$

$$(x-22)(x+1) = 0$$

$$\boxed{x = 22 \quad x = -1}$$

**Part 6: Difference of Squares**

15.  $64x^2 - 4$

$$(8x+2)(8x-2)$$

16.  $4x^2 - 4$

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

17.  $9x^2 - 81$

$$(3x+9)(3x-9)$$

**Part 7: Backwards**

18. If a quadratic function has answers 7 and 10, what could the original quadratic function be?

$$\boxed{(x-7)(x-10)} \quad \text{or} \quad \boxed{x^2 - 17x + 70}$$

19. If a quadratic function has answers -4 and 1, what could the original quadratic function be?

$$\boxed{(x+4)(x-1)} \quad \text{or} \quad \boxed{x^2 + 3x - 4}$$