Name: Key

Unit 5 Review

1) Subtract: $(-2x^3 + 2x^2 - x - 1) - (3x^3 + 5x^2 - x + 5)$

$-5x^3 - 3x^2 - 6$

2) Multiply: $(x + 3)(-3x - 6)$

$-3x^2 - 15x - 18$

3) Multiply: $(4x - 8)(4x + 8)$

$16x^2 - 64$

4) Multiply: $(5x + 2)^2$

$25x^2 + 20x + 4$

5) Solve: $(x - 4)(x + 2) = 0$

4, -2

6) Solve: $x^2 + 3x = 54$

$x^2 + 3x - 54 = 0$

$(x + 9)(x - 6) = 0$

6, -9

7) Factor: $3x^2 - 19x - 40$

$(3x \quad)(x \quad)$

$x^2 - 19x - 120$ 5 | 2

$(x - 24/3)(x + 5/3)$

3(40)
4(30)
6(20)
5(24)

$(x - 8)(3x + 5)$

8, -5/3

8) Factor: $9x^2 - 12x + 4$

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

9) Factor: $64x^2 - 25$

$(8x-5)(8x+5)$

10) Solve: $x^2 = 49$

± 7

or

11) A soccer goalie throws a ball into the air at an initial height of 8 feet and an initial vertical velocity of 28 feet per second. After how many seconds does the ball hit the ground?

$0 = -16t^2 + 8t + 28$

$0 = -4(4t^2 - 2t - 7)$

$0 = -4(t^2 - 2t - 28)$ (2, 4)

$0 = -4(t^2 - 7t - 8)$

$-4(t-8)(t+1)$

2, 4

12) One width of a rectangle can be written as $(b + 9)$. The length can be written as $(b - 4)$. Write a quadratic trinomial that represents the area.

$b^2 + 5b - 36$

13) What is the GCF of $24g^5v^2 + 30gv^2$?

$6gv^2$

14) Multiply: $(z - 9)(z^2 + 2z - 1)$

$z^3 + 2z^2 - z$

$-9z^2 - 18z + 9$

$z^3 - 7z^2 - 20z + 9$

15) Find the roots of $-2 = x^2 - 7x + 8$

$0 = x^2 - 7x + 10$

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

2, 5

16) Solve: $35 = -4x + 4x^2$

$0 = 4x^2 - 4x - 35$

$0 = x^2 - 4x - 140$

$0 = (x - \frac{14}{4})(x + \frac{10}{4})$

$0 = (x - \frac{7}{2})(x + \frac{5}{2})$

$\frac{7}{2}, -\frac{5}{2}$