Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 7 Review

1. Mr. Trump has decided to build a Lego Land here in Denver. A market research firm has concluded that the number of passes ***n*** they will sell is related to the price per pass ***p*** in dollars by the formula, n = -40p + 750.
2. Explain why the income ***I*** from the admission to Lego Land can be determined by the formula: $I=-40p^{2}+750p$.
3. What type of graph do you expect to get from this? What does that tell you about the price of admission?
4. How much should Mr. Trump charge for admission if he wishes to make the most money possible?
5. In a basketball game one of the stats people uses the equation y = $-16t^{2}+20t+6$.
6. What does each part tell you? $-16t^{2}$ ? 20t? 6?
7. How long will a ball be in the air before it touches the ground, if this equation is used?

3. Rewrite each expression in expanded standard form ax2+ bx + c.

1. 3x(x +7) b. -6x (5x) c. 7x (-2x – 9) d. (x + 4)(x – 5) e. (8x -9)(7x +6)

f. -3x (5x -6) – 9(x + 2) g. $(x-4)^{2}-3x(2x)$ h. 6x (5x + 2g) – 4x (3x +7)

1. Solve each of the following equations without the use of tables or graphs.
2. $5x^{2}$ = 45 b. $x^{2} -7x+12=0$ c. $x^{2}+16=0$ d. $x^{2}-36=0$

e. $x^{2}+5=-6x$ f. 16$x^{2}+20x=0$ g. $4x^{2}-8x+3=0   $ h. $9x^{2}+2x+7=0 $

Write the following in standard quadratic form.

1. x(5x – 4)
2. (2x + 3)2
3. (x + 4)(x – 6)
4. x(20 – 2x) + 3x(5x + 4)
5. (x + 5)(x – 5)
6. (3x – 5)(7x + 6)
7. -2(4x – 6) + 9x(7x + 1)
8. 5x(3x + 2)
9. (x – 3)(x + 3)
10. (x – 7)2

**Solve each of the following equations. These are the x-intercepts of the graph.**

1. x2 – 4x = 0
2. 2x – 8x2 = 0
3. 9x2 – 36 = 0
4. x2 + 5x = -6
5. 3x2 + 7x – 6 = 0

**Answer the following questions about a graph.**

1. Compare y = x2 + 2x – 3 and y = x2 + 2x + 6
2. Find the x-intercepts for the graph of y = 4x2 + 4x – 3

**Solve**

1. 3x² + 6x = 0
2. -2x² + 4 = 8
3. 9x² – 3 = 24

1. -2x² – 6x = 0
2. x² - x = 0

**Find the max height and zeros**

1. h = -16t² + 30t + 10
2. h = 16 + 50t – 16t²

**Solve**

1. x² + 5x – 3 = 0
2. x² – x – 8 = 4
3. x² – 7x + 8 = -2

**Simplify**

1. 4x(x + 7) + 8(x – 2)
2. 3(x – 7) + 2(-4)
3. 12x(-2x – 8)
4. x(x + 1) – 2(x – 6)
5. $\frac{4x+8}{2}$

**Solve**

1. -4x + 8 = 16
2. 2x + 5 = x – 3
3. 6x + 3 = 18
4. 5x – 7 = -3x + 10
5. 3x + 9 = 27

**Evaluate**

1. -7(4) + 5(3)
2. -5 –(-4)
3. 9(8 – 17)
4. -12(-2) + 4(7)
5. 6(8) + 10(5 + 4)