Geometry Lomac 2015-2016	Date 1/13 due 1/14	Quadratics: Review 7.8L

Name _____ **Per**_____

LO: I can find zeros of a quadratic, complete the square to write the equation for a quadratic in vertex form, solve word problems by modeling situations with a quadratic function.

☐ **DO NOW** On the back of this packet

☐ (1) **Quadratics: 7.1 Parabolas**

104 a) Given the function $f(x) = -x^2 + 8x + 9$, state whether the vertex represents a maximum or minimum point for the function. Explain your answer.

106 Which quadratic function has the largest maximum?

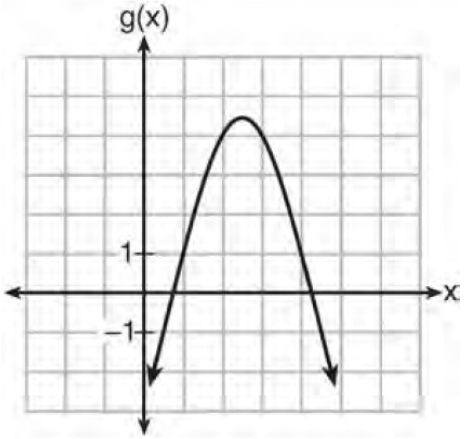
1 $h(x) = (3-x)(2+x)$

2

x	f(x)
−1	−3
0	5
1	9
2	9
3	5
4	−3

3 $k(x) = -5x^2 - 12x + 4$

4



☐ (2) **Quadratics: 7.2 Complete the square for vertex form**

For #104, you did part (a) in #1. Now do part (b).

104 a) Given the function $f(x) = -x^2 + 8x + 9$, state whether the vertex represents a maximum or minimum point for the function. Explain your answer.
b) Rewrite *f(x)* in vertex form by completing the square.

86 A student was given the equation $x^2 + 6x - 13 = 0$ to solve by completing the square. The first step that was written is shown below.

$$x^2 + 6x = 13$$

The next step in the student's process was $x^2 + 6x + c = 13 + c$. State the value of c that creates a perfect square trinomial. Explain how the value of c is determined.

87 Which equation has the same solutions as $x^2 + 6x - 7 = 0$?

1 $(x+3)^2 = 2$

2 $(x-3)^2 = 2$

3 $(x-3)^2 = 16$

4 $(x+3)^2 = 16$

88 Solve the equation $4x^2 - 12x = 7$ algebraically for x.

89 When directed to solve a quadratic equation by completing the square, Sam arrived at the equation $\left(x - \frac{5}{2}\right)^2 = \frac{13}{4}$. Which equation could have been the original equation given to Sam?

1 $x^2 + 5x + 7 = 0$

2 $x^2 + 5x + 3 = 0$

3 $x^2 - 5x + 7 = 0$

4 $x^2 - 5x + 3 = 0$

☐ (3) **Quadratics: 7.3 & 7.4 & 7.5 Zero Product Property**

74 Solve $8m^2 + 20m = 12$ for m by factoring.

75 Keith determines the zeros of the function $f(x)$ to be -6 and 5. What could be Keith's function?

1 $f(x) = (x + 5)(x + 6)$
2 $f(x) = (x + 5)(x - 6)$
3 $f(x) = (x - 5)(x + 6)$
4 $f(x) = (x - 5)(x - 6)$

77 Which equation has the same solutions as $2x^2 + x - 3 = 0$

1 $(2x - 1)(x + 3) = 0$
2 $(2x + 1)(x - 3) = 0$
3 $(2x - 3)(x + 1) = 0$
4 $(2x + 3)(x - 1) = 0$

78 The zeros of the function $f(x) = 3x^2 - 3x - 6$ are

1 -1 and -2
2 1 and -2
3 1 and 2
4 -1 and 2

84 Write an equation that defines $m(x)$ as a trinomial where $m(x) = (3x - 1)(3 - x) + 4x^2 + 19$. Solve for x when $m(x) = 0$.

85 If $4x^2 - 100 = 0$, the roots of the equation are

1 -25 and 25
2 -25, only
3 -5 and 5
4 -5, only

☐ (3) **Quadratics: 7.6 & 7.7 Zero Word Problems and Modeling**

103 A toy rocket is launched from the ground straight upward. The height of the rocket above the ground, in feet, is given by the equation $h(t) = -16t^2 + 64t$, where t is the time in seconds. Determine the domain for this function in the given context. Explain your reasoning.

93 Sam and Jeremy have ages that are consecutive odd integers. The product of their ages is 783. Which equation could be used to find Jeremy's age, j, if he is the younger man?

1 $j^2 + 2 = 783$

2 $j^2 - 2 = 783$

3 $j^2 + 2j = 783$

4 $j^2 - 2j = 783$

97 New Clarendon Park is undergoing renovations to its gardens. One garden that was originally a square is being adjusted so that one side is doubled in length, while the other side is decreased by three meters. The new rectangular garden will have an area that is 25% more than the original square garden. Write an equation that could be used to determine the length of a side of the original square garden. Explain how your equation models the situation. Determine the area, in square meters, of the new rectangular garden.