Name: _____ Class: _____ Date: _____ ID: A

Math 11P Learning Guide 5 Test A

Multiple Choice: *Identify the choice that best answers the question.*

____ 1. What are the x-intercepts of $y = (x-6)(y-9)$?

A 6 and 9
B –6 and –9
C –6 and 9
D 6 and –9

____ 2. What is the vertex of $y = 7(x+5)^2 + 4$?

A (5, 4)
B (–4, 5)
C (–5, 4)
D (7, –4)

____ 3. What are the domain and range of $y = 7(x-1)^2 - 9$?

A Domain: $\{x|x \le -1, x \in R\}$
Range: $\{y|y \in R\}$
B Domain: $\{x|x \in R\}$
Range: $\{y|y \ge -9, y \in R\}$
C Domain: $\{x|x \ge 7,\ x \in R\}$
Range: $\{y|y \in R\}$
D Domain: $\{x|x \in R\}$
Range: $\{y|y \le -1, y \in R\}$

____ 4. The vertex of a parabola is located at (–5, 6). If the parabola has a y-intercept of 231, which quadratic function represents the parabola?

A $f(x) = 9(x-5)^2 + 6$
B $f(x) = 9(x+5)^2 + 6$
C $f(x) = -9(x+5)^2 + 6$
D $f(x) = 9(x-5)^2 - 6$

____ 5. Which function is *not* quadratic?

A $f(x) = (6x+9)\left(\frac{1}{9}x - 9\right)$
B $f(x) = x(x-9)(6x+8)$
C $f(x) = 7x^2 + 8$
D $f(x) = 6(x-9)^2$

____ 6. What are the coordinates of the vertex of the quadratic function $y = 4x^2 + 8x - 2$?

A (–6, –1)
B (8, –2)
C (–1, –6)
D (8, –6)

____ 7. What is the function $y = 2(x-4)^2 - 2$ written in standard form?

A $y = 2x^2 - 8x + 30$
B $y = 2x^2 - 8x + 34$
C $y = 2x^2 - 16x + 34$
D $y = 2x^2 - 16x + 30$

____ 8. State whether the function $y = 4x^2 - 36x - 43$ has a maximum or minimum value and identify the coordinates of the vertex.

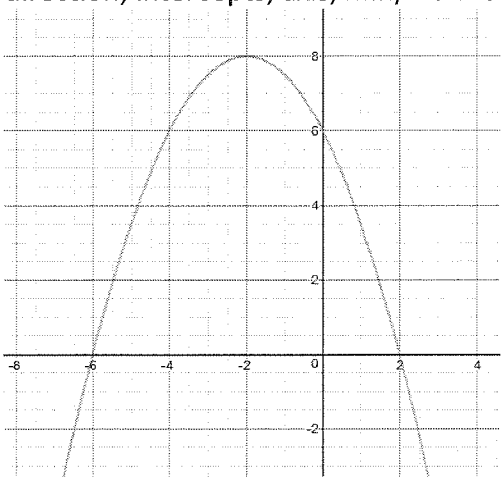
A maximum at (4.5, – 124)
B maximum at (–124, 4.5)
C minimum at (–124, 4.5)
D minimum at (4.5, – 124)

LG 5 Test A – Part B Show all your work.

1) Explain as much as you can about the following quadratic equation. Include a graph if you think it will help. (vertex, domain, range, direction, intercepts, axis, min/max value)

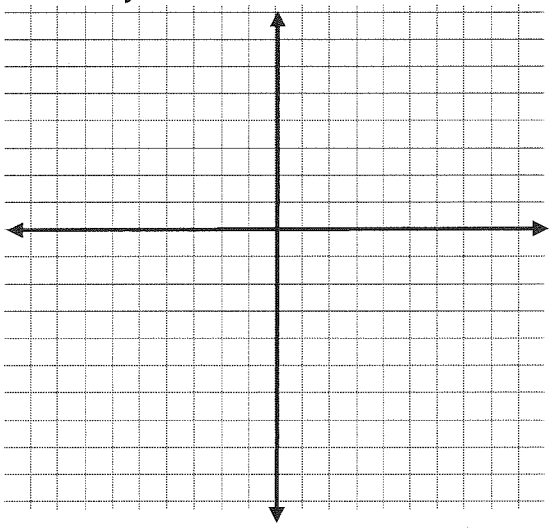
$$y = -3(x + 2)^2 + 5$$

2) Using the graph below, describe as many properties of this graph of a parabola including coordinates and values that accurately describe the image. (vertex, domain, range, direction, intercepts, axis, min/max value)



3) On the coordinate grid below, sketch the graph of the following quadratic equation.

$$y = -2x^2 + 12x - 10$$



4) Use completing the square technique to convert the following equation from standard form into vertex form.

$$y = 2x^2 - 7x + 8$$

5) During a kickoff in a football game, the football flies according to the equation: $y = -4.5x^2 + 22.5x$. Determine the **coordinates** of the maximum height the football reaches when it is in the air.