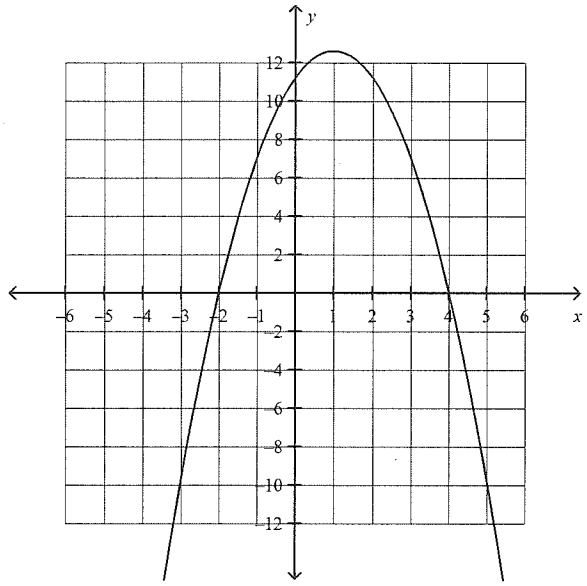
Name: _____ Class: _____ Date: _____ ID: A

Math 11 Pre-calculus LG 6/7 Ver A

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. What are the x-intercepts of the quadratic function graphed here?



A 2 and –4
B –2 and 4
C 11.2
D 12.6

____ 2. What are the roots of the quadratic function $y = -6.1x^2 - 97.6x - 390.4$?

A –8 and 0
B –390.4 and 8
C –8
D 8

____ 3. Factor $x^2 - 20x + 75$ completely.

A $(x-5)(x+15)$
B $(x+5)(x+15)$
C $(x+5)(x-15)$
D $(x-5)(x-15)$

____ 4. Factor $-4x^2 + 68x - 120$ completely.

A $-4(x-2)(x-15)$
B $-4(x+2)(x+15)$
C $-4(x+2)(x-15)$
D $-4(x-2)(x+15)$

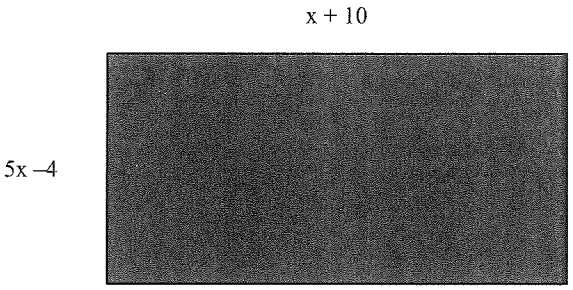
____ 5. Determine the roots of the quadratic equation $-5x^2 + 55x = 50$.

A $x = -10$ and $x = -1$
B $x = -50$ and $x = -5$
C $x = 10$ and $x = 1$
D $x = 2$ and $x = \frac{1}{5}$

____ **6.** Solve $(x+4)(x-9)=0$.

A $x=4$ and $x=-9$
B $x=4$ and $x=9$
C $x=-4$ and $x=9$
D $x=-4$ and $x=-9$

____ **7.** A rectangle has dimensions $x+10$ and $5x-4$, where x is in centimetres. If the area of the rectangle is 72 cm^2, what is the value of x, to the nearest tenth of a centimetre?



A $x=2.0$
B $x=-4.6$
C $x=11.2$
D $x=-11.2$

____ **8.** The vertex form of $4x^2+16x+11=0$ is

A $4(x+5)^2-2=0$
B $4(x-2)^2+5=0$
C $4(x+2)^2-5=0$
D $4(x-2)^2-5=0$

____ **9.** Solve $(x+1)^2=43$.

A $1+\sqrt{43}$ and $1-\sqrt{43}$
B $-1+\sqrt{43}$ and $-1-\sqrt{43}$
C $2\sqrt{11}$
D $\sqrt{42}$

____ **10.** When Alex rides his dirt bike off a ramp, his path can be modelled by $h(d)=-3.9d^2+13.1d+8.7$, where d is the horizontal distance from the ramp and h is the height, both in metres. How far away from the ramp does he land, to the nearest tenth of a metre?

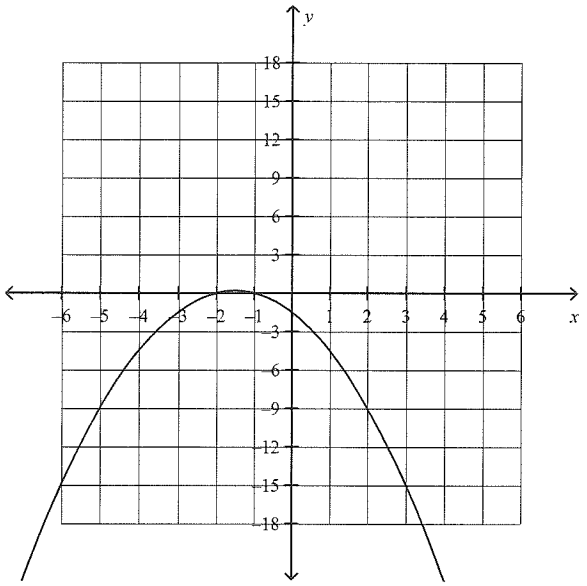
A 2.0 m
B 0.6 m
C 7.9 m
D 3.9 m

____ 11. The number of real roots for the equation $y = -30.6x^2 + 30.7x - 39.8$ is

A 2
B 0
C 1
D impossible to tell

Completion
Complete each statement.

1. The completely factored form of $y = 3x^2 + 99x + 780$ is _____.
2. The quadratic equation $y = 30.8x^2 + 22.5x - 48.3$ has _____ real root(s).
3. The quadratic equation for this parabola is _____.



Learning Guide 6/7 Test A

Short Answer: Show **All** Work in an organized fashion and **Circle** your final answers.

1) Describe the situations in which the graph of a quadratic equation will have one solution, no solution and two solutions.

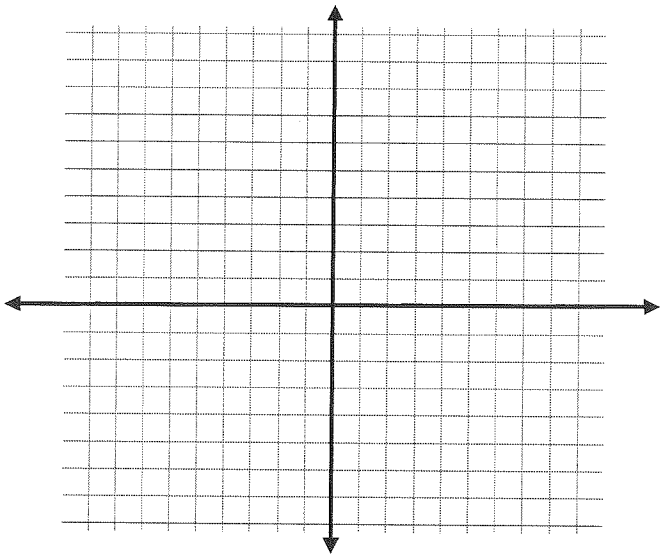
   One solution-

   No solution-

   Two solutions-

2) Using the coordinate grid below, graph the solutions of the quadratic equation.

$$y = -x^2 + 4x + 5$$



3) Use the method of factoring to determine the roots of the following quadratic equation. State answers as exact values.

$$y = -3x^2 + 5x + 12$$

4) Use the quadratic formula to determine the zeros of the following quadratic function. State answers as exact values.

$$y = 4x^2 - 17x + 5$$

5) Determine the value of the descriminant, and the nature of the roots for the following quadratic equation.

$$y = -2x^2 + 5x - 4$$

6) A farmer has 80m of fencing available to close in a rectangular garden in order keep the animals out. Determine the dimensions that will produce a garden of area $320m^2$ or larger. (Sketch a diagram if needed) Round answers to the nearest tenth of a metre.