Formula Provided
$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Part 1: Multiple Choice (10 marks)
Identify the choice that best completes the statement or answers the question.

1.   What are the zero(s) of the quadratic function graphed below?   1._____

A)   -6

B)   -3 and 2

C)   0 and 6

D)   3 and -2
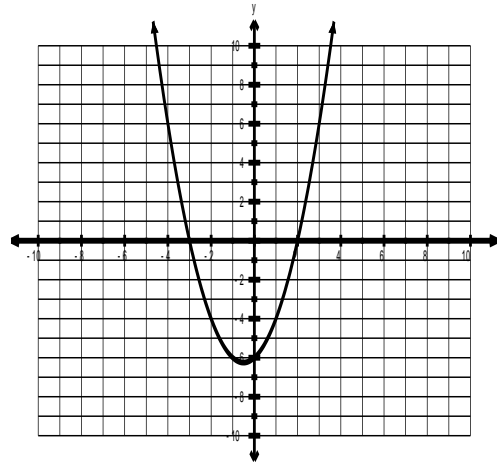
2.   Which graph represents a quadratic equation with roots $1 \pm \sqrt{5}$?   2._____

A)

B)

C)

D)

3.   The flight path of an eagle as it dives from a tree is given by   3._____
     $h(t) = 25 - 20t + 5t^2$, where h(t) is the height above ground, in
     meters, t seconds after it begins its dive. Which equation represents
     the time, in seconds, that the eagle is 10 meters above the ground?

A) $h(-10) = 25 - 20(-10) + 5(-10)^2$
B) $h(10) = 25 - 20(10) + 5(10)^2$
C) $-10 = 25 - 20t + 5t^2$
D) $10 = 25 - 20t + 5t^2$

4.   What are the zeros of the function $y = (4x - 1)(x + 3)$?

          4._____

A)   -3 and 1

B)   -3 and $\dfrac{1}{4}$

C)   3 and $-\dfrac{1}{4}$

D)   3 and - 1

5. Which correctly represents the factored form of $y = x^2 - 13x - 30$?   5._____

A) $y = (x - 10)(x - 3)$
B) $y = (x + 10)(x + 3)$
C) $y = (x - 15)(x + 2)$
D) $y = (x + 15)(x - 2)$

6. The following question was solved incorrectly.   6._____
    In which line was the **first** mistake made?

$$0 = 2x^2 + 14x + 12$$

A) Line 1: $0 = 2(x^2 + 7x + 12)$
B) Line 2: $0 = 2(x + 3)(x + 4)$
C) Line 3: $0 = (x + 3)$ or $0 = x + 4$
D) Line 4: $x = 3$ or $x = 4$

7. How many x-intercept(s) does the function $f(x) = x^2 + 4x + 4$ have when   7._____
    graphed?

A) 3
B) 2
C) 1
D) 0

8. What are the root(s) of the equation $36x^2 = 49$?   8._____

A) $\frac{6}{7}$ and $-\frac{6}{7}$

B) $\frac{7}{6}$ and $-\frac{7}{6}$

C) $\frac{6}{7}$

D) $\frac{7}{6}$

9. What are the x-intercept(s) of the graph for $y = 4x^2 - 6x$?   9._____

A) - 4 and 6

B) 0 and $\frac{3}{2}$

C) $\frac{3}{2}$

D) 4 and - 6

10. Which equation below has x-intercepts at 3 and -4?   10._____

A) $y = x^2 - x - 12$
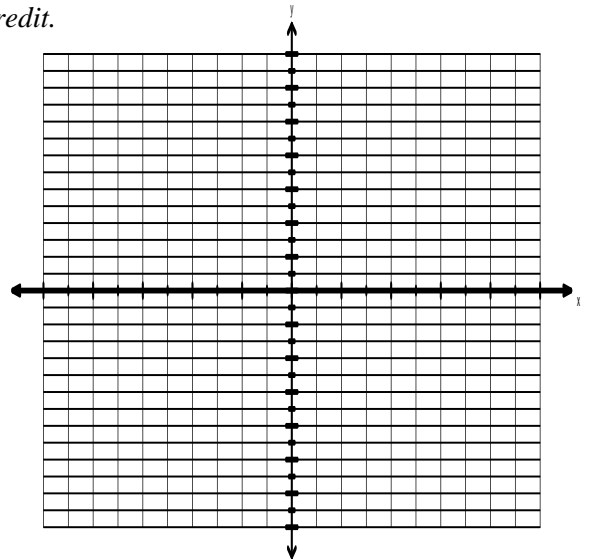B) $y = x^2 - x - 7$
C) $y = x^2 + x - 7$
D) $y = x^2 + x - 12$

Holy Spirit High School
Math 2201 Chapter 7 Quadratic Equations SAMPLE Test

Part 2: Constructed Response (20 marks)
Show ALL necessary workings in the space provided to receive full credit.

11. Graph $y = x^2 - 2x - 8$ (4 marks)

a)   Find the vertex.

b)   Find the y-intercept

c)   Find the x-intercept(s) , if any.

d)   Graph the parabola.

12.   Solve the following equations by **factoring**. (4 marks each)

a) $x(x - 11) = -4(14 - x)$

b) $8x^2 - 10x = 3$

13.   Find the EXACT ROOTS of the equation $3x^2 - 2x - 4 = 0$ (4 marks)

14.   The owner of a new home would like to surround the paved rectangular driveway with
a brick border of uniform width on all sides. The dimensions of the paved driveway are
24 feet by 10 feet. If the entire driveway and stone border is to have a total area of 312
square feet, determine the quadratic equation that models the area of the entire driveway
and use it to algebraically determine the width of the paving stone border.
             (4 marks)

x   x   x

x

24 ft   Driveway

x

x   x   **10 ft**   x