Grade 9 Mathematics M3/13, M3/14

Quadratic Equations — Multiple Choice Questions

Name: _____ **Date:** _____

Instructions: Choose the best answer for each question. Show your working where necessary.

1. Which of the following is a quadratic equation?

   A. $3x + 5 = 0$
   B. $x^2 - 4x + 3 = 0$
   C. $2/x + 1 = 0$
   D. $x^3 - 2 = 0$

2. What are the solutions of $x^2 - 5x + 6 = 0$?

   A. $x = 1, 6$
   B. $x = 2, 3$
   C. $x = -2, -3$
   D. $x = 3, 6$

3. Solve: $x^2 - 9 = 0$.

   A. $x = 9$
   B. $x = -9$
   C. $x = \pm 3$
   D. $x = 3$ only

4. Which factorization is correct for $x^2 + 7x + 12$?

   A. $(x + 3)(x + 4)$
   B. $(x + 2)(x + 6)$
   C. $(x - 3)(x - 4)$
   D. $(x + 1)(x + 12)$

5. What is the value of the discriminant of $2x^2 + 3x - 2 = 0$?

   A. 1
   B. 9
   C. 25
   D. 17

6. How many real solutions does $x^2 + 4x + 7 = 0$ have?

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

7. Solve: $x^2 + 2x - 8 = 0$.

   A. $x = 2, -4$
   B. $x = 4, -2$
   C. $x = 2, 4$

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D. $x = -2, -4$

8. For $3x^2 - 12x = 0$, what are the solutions?

A. $x = 0, 4$
B. $x = 3, 4$
C. $x = -4, 0$
D. $x = 4$ only

9. Which equation has roots $x = 2$ and $x = -5$?

A. $x^2 + 3x - 10 = 0$
B. $x^2 - 3x - 10 = 0$
C. $x^2 + 7x + 10 = 0$
D. $x^2 - 7x + 10 = 0$

10. What is the sum of the roots of $2x^2 - 7x + 3 = 0$?

A. $-7/2$
B. $7/2$
C. $3/2$
D. $-3/2$

11. Solve using the quadratic formula: $x^2 - 6x + 5 = 0$.

A. $x = 1, 5$
B. $x = -1, -5$
C. $x = 2, 4$
D. $x = 3, 5$

12. If $x^2 - kx + 12 = 0$ has roots 3 and 4, what is k?

A. 1
B. 7
C. 12
D. 14

13. Which value of x satisfies $2x^2 + x - 3 = 0$?

A. $x = 1$
B. $x = -1$
C. $x = 3/2$
D. $x = 2$

14. A rectangle has area 48 cm^2 and its length is 2 cm more than its width. What is its width?

A. 4 cm
B. 6 cm
C. 8 cm
D. 10 cm

15. The graph of a quadratic equation crosses the x-axis at $x = -2$ and $x = 5$. Which equation could represent it?

A. $y = x^2 + 3x - 10$
B. $y = x^2 - 3x - 10$

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C. $y = x^2 - 7x + 10$
D. $y = x^2 + 7x + 10$

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