

*A.A.27: Understand and apply the multiplication property of zero to solve quadratic equations with integral coefficients and integral roots.*

1. 010215a, P.I. A.A.27

What is the solution set of the equation  $3x^2 = 48$ ?

- [A] {4,-4}                      [B] {4,4}  
[C] {-2,-8}                    [D] {2,8}

2. 080921ia, P.I. A.A.27

The solution to the equation  $x^2 - 6x = 0$  is

- [A] 6, only                      [B] 0, only  
[C]  $\pm\sqrt{6}$                       [D] 0 and 6

3. 010727a, P.I. A.A.27

What is the solution set of the equation  $x^2 - 5x = 0$ ?

- [A] {0}    [B] {5}    [C] {0,5}    [D] {0,-5}

4. 080012a, P.I. A.A.27

The solution set for the equation  $x^2 - 2x - 15 = 0$  is

- [A] {5,3}                      [B] {-5,-3}  
[C] {5,-3}                    [D] {-5,3}

5. 060725a, P.I. A.A.27

The solution set of the equation  $x^2 - 4x - 12 = 0$  is

- [A] {-6,2}                      [B] {-3,4}  
[C] {-2,6}                      [D] {-4,3}

6. 080118a, P.I. A.A.27

What is the solution set of  $m^2 - 3m - 10 = 0$ ?

- [A] {2,-5}                      [B] {3,10}  
[C] {3,-10}                    [D] {5,-2}

7. 060313a, P.I. A.A.27

What is the solution set of the equation  $x^2 - 5x - 24 = 0$ ?

- [A] {-3,-8}                      [B] {-3,8}  
[C] {3,-8}                      [D] {3,8}

8. 010520a, P.I. A.A.27

What is the solution set for the equation

$$x^2 - 5x + 6 = 0?$$

[A]  $\{-2, -3\}$

[B]  $\{-6, 1\}$

[C]  $\{6, -1\}$

[D]  $\{2, 3\}$

9. 060514a, P.I. A.A.27

What is the solution set of the equation

$$x^2 + 11x + 28 = 0?$$

[A]  $\{-7, -4\}$

[B]  $\{-7, 4\}$

[C]  $\{3, 4\}$

[D]  $\{-3, -4\}$

10. 080525a, P.I. A.A.27

The solution set for the equation  $x^2 - 5x = 6$  is

[A]  $\{-2, 3\}$

[B]  $\{2, -3\}$

[C]  $\{1, -6\}$

[D]  $\{-1, 6\}$

11. 080825a, P.I. A.A.27

For which equation is the solution set  $\{-5, 2\}$ ?

[A]  $x^2 + 3x = -10$

[B]  $x^2 - 3x = 10$

[C]  $x^2 - 3x + 10 = 0$

[D]  $x^2 + 3x - 10 = 0$

12. 010913a, P.I. A.A.27

Which equation has the solution set  $\{1, 3\}$ ?

[A]  $x^2 - 4x + 3 = 0$

[B]  $x^2 + 4x + 3 = 0$

[C]  $x^2 - 4x - 3 = 0$

[D]  $x^2 + 4x - 3 = 0$

13. 080733a, P.I. A.A.27

What is the positive solution of the equation  $4x^2 - 36 = 0$ ?

14. 089926a, P.I. A.A.27

Solve for  $x$ :  $x^2 + 3x - 40 = 0$

15. 060229a, P.I. A.A.27

Solve for  $x$ :  $x^2 + 3x - 28 = 0$

16. 010637a, P.I. A.A.27

Solve for  $x$ :  $x^2 + 2x - 24 = 0$

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[1] A

[2] D

[3] C

[4] C

[5] C

[6] D

[7] B

[8] D

[9] A

[10] D

[11] D

[12] A

[2] 3, and appropriate work is shown, such as factoring or trial and error with at least three trials and appropriate checks.

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but one conceptual error is made, such as not rejecting the negative root.

or [1] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.

or [1] 3, but no work or fewer than three trials and appropriate checks are shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[13] incorrect procedure.

[3] –8 and 5 and appropriate work is shown, such as factoring or trial and error.

[2] The student shows correct factoring into  $(x + 8)(x - 5)$  or correct use of the quadratic formula but finds only one correct value for  $x$ .

[1] Correct factoring is shown, but no values are found.

or

[1] Incorrect factoring is shown, but two appropriate values are found.

or

[1] Either –8 or 5 is arrived at by trial and error.

or

[1] –8 and 5 and no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[14] incorrect procedure.

[3] –7 and 4, and appropriate work is shown, such as factoring.

[2] Correct factoring  $(x + 7)(x - 4)$  is shown, but only one correct value of  $x$  is found.

or [2] Correct factoring is shown, but the negative value of  $x$  is rejected.

[1] Correct factoring is shown, but the values of  $x$  are not found.

or [1] Incorrect factoring is shown, but appropriate values are found.

or [1] Only one value is found by trial and error.

or [1] –7 and 4, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[15] incorrect procedure.

- [3] -6 and 4, and appropriate work is shown, such as factoring or trial and error with at least three trials and appropriate checks.
- [2] Appropriate work is shown, but one computational error is made.
- or [2] Appropriate work is shown, but only one correct value for  $x$  is found.
- or [2] The trial-and-error method is used to find the correct solutions, but only two trials and appropriate checks are shown.
- [1] Appropriate work is shown, but two or more computational errors are made.
- or [1] Appropriate work is shown, but one conceptual error is made.
- or [1] The equation is factored correctly, but no values are found.
- or [1] The equation is factored incorrectly, but two appropriate values are found.
- or [1] -6 and 4, but no work or only one trial with an appropriate check is shown.
- [0] -6 or 4, but no work or only one trial with an appropriate check is shown.
- or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [16] \_\_\_\_\_