

A.REI.B.4: Solving Quadratics 2a

- 1 What is the solution set of the equation $x^2 - 5x = 0$?
 - 1) $\{0, -5\}$
 - 2) $\{0, 5\}$
 - 3) $\{0\}$
 - 4) $\{5\}$
- 2 The solution to the equation $x^2 - 6x = 0$ is
 - 1) 0, only
 - 2) 6, only
 - 3) 0 and 6
 - 4) $\pm\sqrt{6}$
- 3 The solution set for the equation $x^2 - 2x - 15 = 0$ is
 - 1) $\{5, 3\}$
 - 2) $\{5, -3\}$
 - 3) $\{-5, 3\}$
 - 4) $\{-5, -3\}$
- 4 What is the solution set of $m^2 - 3m - 10 = 0$?
 - 1) $\{5, -2\}$
 - 2) $\{2, -5\}$
 - 3) $\{3, -10\}$
 - 4) $\{3, 10\}$
- 5 What is the solution set of the equation $x^2 - 5x - 24 = 0$?
 - 1) $\{-3, 8\}$
 - 2) $\{-3, -8\}$
 - 3) $\{3, 8\}$
 - 4) $\{3, -8\}$
- 6 What is the solution set for the equation $x^2 - 5x + 6 = 0$?
 - 1) $\{-6, 1\}$
 - 2) $\{6, -1\}$
 - 3) $\{-2, -3\}$
 - 4) $\{2, 3\}$
- 7 What is the solution set of the equation $x^2 + 11x + 28 = 0$?
 - 1) $\{-7, 4\}$
 - 2) $\{-7, -4\}$
 - 3) $\{3, 4\}$
 - 4) $\{-3, -4\}$
- 8 The solution set of the equation $x^2 - 4x - 12 = 0$ is
 - 1) $\{-6, 2\}$
 - 2) $\{-4, 3\}$
 - 3) $\{-2, 6\}$
 - 4) $\{-3, 4\}$
- 9 The solution set for the equation $x^2 - 5x = 6$ is
 - 1) $\{1, -6\}$
 - 2) $\{2, -3\}$
 - 3) $\{-1, 6\}$
 - 4) $\{-2, 3\}$
- 10 The solutions of $x^2 = 16x - 28$ are
 - 1) -2 and -14
 - 2) 2 and 14
 - 3) -4 and -7
 - 4) 4 and 7
- 11 If $(x - 4)$ is a factor of $x^2 - x - w = 0$, then the value of w is
 - 1) 12
 - 2) -12
 - 3) 3
 - 4) -3
- 12 Which equation has the solution set $\{1, 3\}$?
 - 1) $x^2 - 4x + 3 = 0$
 - 2) $x^2 - 4x - 3 = 0$
 - 3) $x^2 + 4x + 3 = 0$
 - 4) $x^2 + 4x - 3 = 0$

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

- 1) $x^2 + 3x - 10 = 0$
- 2) $x^2 - 3x = 10$
- 3) $x^2 + 3x = -10$
- 4) $x^2 - 3x + 10 = 0$

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

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

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

17 Solve: $(x - 3)(x + 3) = 6x - 14$

18 Solve the equation for y : $(y - 3)^2 = 4y - 12$

19 Write an equation that defines $m(x)$ as a trinomial where $m(x) = (3x - 1)(3 - x) + 4x^2 + 19$. Solve for x when $m(x) = 0$.

20 One root of the equation $2x^2 - x - 15 = 0$ is

- 1) $\frac{5}{2}$
- 2) $\frac{3}{2}$
- 3) 3
- 4) -3

21 What is the solution set of the equation

$$3x^2 - 34x - 24 = 0?$$

- 1) $\{-2, 6\}$
- 2) $\{-12, \frac{2}{3}\}$
- 3) $\{-\frac{2}{3}, 12\}$
- 4) $\{-6, 2\}$

22 What are the solutions to the equation

$$3x^2 + 10x = 8?$$

- 1) $\frac{2}{3}$ and -4
- 2) $-\frac{2}{3}$ and 4
- 3) $\frac{4}{3}$ and -2
- 4) $-\frac{4}{3}$ and 2

23 Solve: $3x^2 - 11x = 70$

24 Solve: $5x^2 - 12x = 108$

25 Solve the equation $4x^2 - 12x = 7$ algebraically for x .

26 Solve: $6x^2 + x - 1 = 0$

27 Solve: $6 - x = 12x^2$

28 Solve: $6x^2 - x - 2 = 0$

29 Solve: $8x^2 - 2x - 3 = 0$

30 Amy solved the equation $2x^2 + 5x - 42 = 0$. She stated that the solutions to the equation were $\frac{7}{2}$ and -6 . Do you agree with Amy's solutions? Explain why or why not.

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Answer Section

1 ANS: 2

$$x^2 - 5x = 0$$

$$x(x - 5) = 0$$

$$x = 0 \quad (x - 5) = 0$$

$$x = 0 \quad x = 5$$

REF: 010727a

2 ANS: 3

$$x^2 - 6x = 0$$

$$x(x - 6) = 0$$

$$x = 0 \quad x = 6$$

REF: 080921ia

3 ANS: 2

$$x^2 - 2x - 15 = 0$$

$$(x - 5)(x + 3) = 0$$

$$x = 5 \quad x = -3$$

REF: 080012a

4 ANS: 1

$$m^2 - 3m - 10 = 0$$

$$(m - 5)(m + 2) = 0$$

$$m = 5 \quad m = -2$$

REF: 080118a

5 ANS: 1

$$x^2 - 5x - 24 = 0$$

$$(x - 8)(x + 3) = 0$$

$$x = 8 \quad x = -3$$

REF: 060313a

6 ANS: 4

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

$$(x - 3)(x - 2) = 0$$

$$x = 3 \quad x = 2$$

REF: 010520a

7 ANS: 2

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

$$(x + 7)(x + 4) = 0$$

$$x = -7 \quad x = -4$$

REF: 060514a

8 ANS: 3

$$x^2 - 4x - 12 = 0$$

$$(x - 6)(x + 2) = 0$$

$$x = 6 \quad x = -2$$

REF: 060725a

9 ANS: 3

$$x^2 - 5x = 6$$

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

$$(x - 6)(x + 1) = 0$$

$$x = 6 \quad x = -1$$

REF: 080525a

10 ANS: 2

$$x^2 - 16x + 28 = 0$$

$$(x - 14)(x - 2) = 0$$

$$x = 14, 2$$

REF: 061311ia

11 ANS: 1

$$(x - 4)(x + 3) = 0$$

$$x^2 - x - 12 = 0$$

REF: 060430a

12 ANS: 1

$$x^2 - 4x + 3 = 0$$

$$(x - 3)(x - 1) = 0$$

$$x = 3 \quad x = 1$$

REF: 010913a

13 ANS: 1

$$x^2 + 3x - 10 = 0$$

$$(x + 5)(x - 2) = 0$$

$$x = -5 \quad x = 2$$

REF: 080825a

14 ANS:

$$x^2 + 3x - 40 = 0$$

$$-8 \text{ and } 5. (x + 8)(x - 5) = 0$$

$$x = -8 \quad x = 5$$

REF: 089926a

15 ANS:

$$x^2 + 3x - 28 = 0$$

$$-7 \text{ and } 4. (x + 7)(x - 4) = 0$$

$$x = -7 \quad x = 4$$

REF: 060229a

16 ANS:

$$x^2 + 2x - 24 = 0$$

$$-6, 4. (x + 6)(x - 4) = 0$$

$$x = -6 \quad x = 4$$

REF: 010637a

17 ANS:

1, 5

REF: 069109a1

18 ANS:

$$y^2 - 6y + 9 = 4y - 12$$

$$y^2 - 10y + 21 = 0$$

$$(y - 7)(y - 3) = 0$$

$$y = 7, 3$$

REF: 011627ai

19 ANS:

$$m(x) = (3x - 1)(3 - x) + 4x^2 + 19 \quad x^2 + 10x + 16 = 0$$

$$m(x) = 9x - 3x^2 - 3 + x + 4x^2 + 19 \quad (x + 8)(x + 2) = 0$$

$$m(x) = x^2 + 10x + 16 \quad x = -8, -2$$

REF: 061433ai

20 ANS: 3

$$2x^2 - x - 15 = 0$$

$$(2x + 5)(x - 3) = 0$$

$$x = -\frac{5}{2} \quad x = 3$$

REF: 060104a

21 ANS: 3

$$3x^2 - 34x - 24 = 0$$

$$(3x + 2)(x - 12) = 0$$

$$x = -\frac{2}{3} \quad x = 12$$

REF: 010419a

22 ANS: 1

$$3x^2 + 10x - 8 = 0$$

$$(3x - 2)(x + 4) = 0$$

$$x = \frac{2}{3}, -4$$

REF: 081619ai

23 ANS:

$$7, -\frac{10}{3}$$

REF: 019805al

24 ANS:

$$6, -\frac{18}{5}$$

REF: 069805al

25 ANS:

$$4x^2 - 12x - 7 = 0$$

$$(4x^2 - 14x) + (2x - 7) = 0$$

$$2x(2x - 7) + (2x - 7) = 0$$

$$(2x + 1)(2x - 7) = 0$$

$$x = -\frac{1}{2}, \frac{7}{2}$$

REF: 011529ai

26 ANS:

$$\frac{1}{3}, -\frac{1}{2}$$

REF: 019607al

27 ANS:

$$-\frac{3}{4}, \frac{2}{3}$$

REF: 099805al

28 ANS:

$$\frac{1}{3}, -\frac{1}{2}$$

REF: 030005al

29 ANS:

$$\frac{3}{4}, -\frac{1}{2}$$

REF: 060005al

30 ANS:

$$2x^2 + 5x - 42 = 0 \quad \text{Agree, as shown by solving the equation by factoring.}$$

$$(x + 6)(2x - 7) = 0$$

$$x = -6, \frac{7}{2}$$

REF: 061628ai