

Problems for Gateway #3: Solving Quadratic Equations

1. The value(s) of x that solves the equation:

$$x^2 - 2x = -1$$

are:

- (a) $x = 2$ and $x = 1$ only (b) $x = 0$ only
(c) $x = 1$ only (d) $x = -4$ and $x = 2$ only
(e) There are no values of x that satisfy this equation.
2. The value(s) of x that solves the equation:

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

are:

- (a) $x = -2$ and $x = -3$ only (b) $x = 0$ and $x = 1$ only
(c) $x = -6$ and $x = 1$ only (d) $x = -2$ only
(e) There are no values of x that satisfy this equation.
3. The value(s) of x that solves the equation:

$$x^2 + 7x + 12 = 0$$

are:

- (a) $x = 0$ and $x = -8$ only (b) $x = 1$ and $x = 2$ only
(c) $x = -6$ and $x = 1$ only (d) $x = -3$ and $x = -4$ only
(e) $x = -3$ only
4. The value(s) of x that solves the equation:

$$x^2 = 4$$

are:

- (a) $x = -2$ and $x = -3$ only (b) $x = 2$ and $x = -2$ only
(c) $x = -1$ and $x = 1$ only (d) $x = -2$ only
(e) $x = 0$ only
5. The value(s) of x that solves the equation:

$$x^2 - 11x + 30 = 0$$

are:

- (a) $x = 5$ and $x = 6$ only (b) $x = 11$ and $x = 30$ only
(c) $x = -6$ and $x = 1$ only (d) $x = 3$ and $x = 10$ only
(e) $x = 11$ only

6. The value(s) of x that solves the equation:

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

are:

- (a) $x = -2$ and $x = 2$ only (b) $x = 0$ and $x = 1$ only
(c) $x = -1$ and $x = 1$ only (d) $x = 2$ only
(e) $x = 1$ only

7. The value(s) of x that solves the equation:

$$3x^2 - 27x = -60$$

are:

- (a) $x = -3$ and $x = -9$ only (b) $x = 1$ and $x = 3$ only
(c) $x = -5$ and $x = 12$ only (d) $x = 4$ only
(e) $x = 4$ and $x = 5$ only

8. The value(s) of x that solves the equation:

$$2x^2 + 12x + 24 = 0$$

are:

- (a) $x = -2$ and $x = -3$ only (b) $x = 0$ and $x = 1$ only
(c) $x = -2$ and $x = -6$ only (d) $x = -2$ only
(e) There are no values of x that satisfy this equation.

9. The value(s) of x that solves the equation:

$$7x^2 - 21x + 14 = 0$$

are:

- (a) $x = -1$ and $x = -2$ only (b) $x = 0$ and $x = 1$ only
(c) $x = 3$ and $x = 6$ only (d) $x = 1$ and $x = 2$ only
(e) There are no values of x that satisfy this equation.

10. The value(s) of x that solves the equation:

$$3x^2 = 27$$

are:

- (a) $x = -1$ and $x = -3$ only (b) $x = -3$ and $x = 3$ only
(c) $x = 1$ and $x = 3$ only (d) $x = -3$ only
(e) There are no values of x that satisfy this equation.

ANSWERS:

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| 1. | C | 2. | A | 3. | D | 4. | B |
| 5. | A | 6. | E | 7. | E | 8. | E |
| 9. | D | 10. | B | | | | |