

Algebra 1 - Solving Quadratic Equations - Quiz

Common Core A-REI.B.4a, A-REI.B.4b, A-SSE.B.3a, A-CED.A.1 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Try these 10 multiple-choice questions on quadratic equations (A-REI.B.4a, A-REI.B.4b, A-SSE.B.3a, and A-CED.A.1). Pick one answer for each question, then read the explanation to see why it is right and which mistake the other choices come from. Retake the quiz until every answer feels easy.

Algebra 1 · Common Core State Standards: **A-REI.B.4a, A-REI.B.4b, A-SSE.B.3a, A-CED.A.1**

Questions

Question 1

Solve $x^2 = 36$.

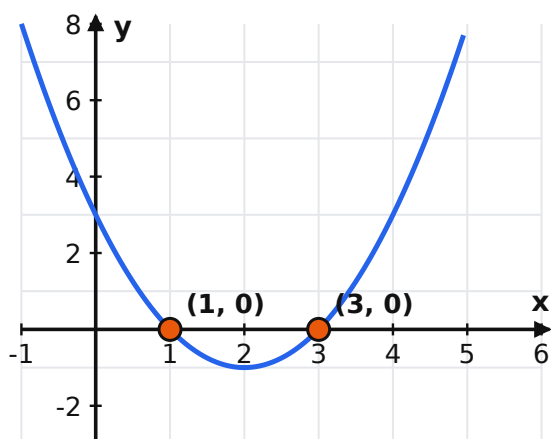
- A. $x = 6$ or $x = -6$
- B. $x = 6$
- C. $x = 18$
- D. $x = -6$

Question 2

Solve $(x+1)(x-5) = 0$.

- A. $x = -1$ or $x = 5$
- B. $x = 1$ or $x = -5$
- C. $x = -1$ or $x = -5$
- D. $x = 1$ or $x = 5$

Question 3



The graph shows $y = x^2 - 4x + 3$. What are the solutions of $x^2 - 4x + 3 = 0$?

- A. $x = 0$ and $x = 3$
- B. $x = 1$ and $x = 3$
- C. $x = -1$ and $x = -3$
- D. $x = 3$ only

Question 4

Solve $x^2 - 11x + 24 = 0$.

- A. $x = -3$ or $x = -8$
- B. $x = 4$ or $x = 6$
- C. $x = 3$ or $x = -8$
- D. $x = 3$ or $x = 8$

Question 5

The trinomial $x^2 - 6x + c$ is a perfect square. What is c ?

- A. 9
- B. 6
- C. 3
- D. 36

Question 6

What is the discriminant of $x^2 - 4x + 5 = 0$?

- A. 4
- B. 36
- C. -4
- D. -36

Question 7

Discriminant	Real solutions
49	?
0	?
-5	?

How many real solutions correspond to a discriminant of 49?

- A. One
- B. Two
- C. None
- D. Four

Question 8

Which are the solutions of $x^2+2x-1=0$ by the quadratic formula?

- A. $x=1\pm\sqrt{2}$
- B. $x=-2\pm\sqrt{2}$
- C. $x=-1\pm\sqrt{2}$
- D. $x=-1\pm 2$

Question 9



The area of the rectangle is 48 square feet. What is the width?

- A. 8 feet
- B. 6 feet
- C. 4 feet
- D. 24 feet

Question 10

A ball's height is $h = -16t^2 + 32t$. When does it return to the ground ($t > 0$)?

- A. 1 second
- B. 16 seconds
- C. 4 seconds

D. 2 seconds

Answers

1. **A** - Both 6 and -6 square to 36. Taking only the positive root misses a solution.
2. **A** - Set each factor to 0: $x + 1 = 0$ gives -1, and $x - 5 = 0$ gives 5.
3. **B** - The solutions are the x-intercepts of the parabola.
4. **D** - The numbers 3 and 8 have product 24 and sum 11, so $(x - 3)(x - 8) = 0$.
5. **A** - Half of -6 is -3, and $(-3)^2 = 9$, so the trinomial is $(x - 3)^2$.
6. **C** - $b^2 - 4ac = 16 - 20 = -4$, so there are no real solutions.
7. **B** - A positive discriminant gives two different real solutions.
8. **C** - $x = \frac{-2 \pm \sqrt{(4 + 4)}}{2} = \frac{-2 \pm 2\sqrt{2}}{2} = -1 \pm \sqrt{2}$.
9. **B** - $w(w + 2) = 48$ gives $w^2 + 2w - 48 = 0$, so $(w + 8)(w - 6) = 0$. The width must be positive: 6 ft.
10. **D** - Factor: $-16t(t - 2) = 0$, so $t = 0$ or $t = 2$. The ball lands at 2 seconds.

Remember

- Standard form: $ax^2 + bx + c = 0$ with $a \neq 0$.
- Zero product property: if $A \cdot B = 0$, then $A = 0$ or $B = 0$.
- Square roots: $x^2 = k$ gives $x = \pm\sqrt{k}$.
- Quadratic formula: $x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$.
- The discriminant $b^2 - 4ac$: positive for two real solutions, zero for one, negative for none.