Quadratic Equations Questions PDF with detailed solutions

Quadratic Equations questions are a common type of questions regularly asked in competitive exams. These questions carry a weightage of 3-5 questions in bank exams. To get a good rank in competitive exams, you have a good practice of Quadratic Equations Questions.

Here are some tips for solving Quadratic Equations questions: Clear the basic concepts, Learn short tricks to find factors, Practice as many questions as you can to improve accuracy especially while comparing values. Try solving a variety of questions.

So, we have attached 10 questions of Quadratic Equations for you to practice with. You should aim to solve these questions in less than half a minute for each.

Practice Questions on Quadratic Equations

You can also download the Quadratic Equations questions and answers pdf. Just click on the **Download PDF** button. So let's start with the very first question.

Direction (1 - 10): In each of these questions, two equations (I) and (II) are given. You have to solve both equations and mark the appropriate answer
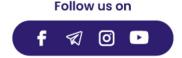
Q:1 I. $x^2 - 3x + 2 = 0$

II. $y^2 - 7y + 10 = 0$

1. x > y

2. x < y

3. x ≥ y

4. x ≤ y

5. x = y or Relationship between x and y cannot be determined

(**Difficulty:** 2, **Estimated Time:** 15 Seconds) This was an easy one. Isn't it?

Q:2 I. $2x^2 - 3x - 9 = 0$

II. $3y^2 + 11y + 6 = 0$

1. x > y

2. x < y

3. x ≥ y

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4. $x \leq y$

5. $x = y$ or the relationship between x and y cannot be determined

(**Difficulty:** 2, **Estimated Time:** 15 Seconds) Another simple one!

Q:3 I. $5x^2 + 4x - 1 = 0$

II. $2y^2 - 3y + 1 = 0$

1. $x > y$

2. $x < y$

3. $x \leq y$

4. $x \geq y$

5. $x = y$ or Relationship between x and y cannot be determined

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) Remember the coefficient of the quadratic term!

Q:4 I. $4x^2 - 12x + 9 = 0$

II. $y^2 + y - 6 = 0$

1. $x > y$

2. $x < y$

3. $x \geq y$

4. $x \leq y$

5. $x = y$ or Relationship between x and y cannot be determined

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) This might not have troubled you!

Q:5 I. $x^2 - 3x - 4 = 0$

II. $2y^2 + 11y + 14 = 0$

1. $x > y$

2. $x \geq y$

3. $x < y$

4. $x \leq y$

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5. x = y or Relationship between x and y cannot be determined

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) We're halfway through. Have you got all your questions correct so far?

Q:6 I. $14x - 37\sqrt{x} + 24 = 0$

II. $8y - 26\sqrt{y} + 21 = 0$

1. x > y

2. x ≥ y

3. x < y

4. x ≤ y

5. x = y or Relationship between x and y cannot be determined

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) Don't get afraid of the root symbol!

Q:7 I. $12x^2 - 71x + 104 = 0$

II. $24y^2 - 109y + 120 = 0$

1. x > y

2. x ≥ y

3. x < y

4. x ≤ y

5. x = y or Relationship between x and y cannot be determined

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) Try using short tricks to save time..

Q:8 I. $x^{9/5} \times x^{11/5} \times 18 = 1458x^2$

II. $(y^{2/9} \div 4)^3 = 4 \div y^{4/3}$

1. x > y

2. x ≥ y

3. x < y

4. x ≤ y

5. x = y or Relationship between x and y cannot be determined

(**Difficulty:** 4, **Estimated Time:** 25 Seconds) This was a bit calculative one...

Q:9 I. $x^2 = 1849$

II. $(y - 13) = 30$

1. $x > y$

2. $x \geq y$

3. $x < y$

4. $x \leq y$

5. $x = y$ or Relationship between x and y cannot be determined

Difficulty: 3, **Estimated Time:** 20 Seconds) If you are good are square roots....

Q:10 I. $x^2 - 2x - 8 = 0$

II. $y^2 - 8y + 15 = 0$

1. $x > y$

2. $x < y$

3. $x \geq y$

4. $x \leq y$

5. $x = y$ or Relationship between x and y cannot be determined

(**Difficulty:** 2, **Estimated Time:** 15 Seconds) Did you guess them all correctly?

Answer Key

Let's check out your score in this test.

1. (4)	**2.** (5)	**3.** (2)	**4.** (5)	**5.** (1)
6. (4)	**7.** (2)	**8.** (5)	**9.** (4)	**10.** (5)

Comment below your score, considering each question has 1 mark only. If you scored 8 to 10, congratulations! You are one step closer to selection. If you have scored 5 to 8 marks, then you are doing well, keep it up. If you have scored less than 5 marks then you need to work a little harder on this subject. But don't worry, we are here to help you master the subject.

Let's check the answers and solutions and try to find out what went wrong.

Answers and Solutions

Q:1 The correct answer is **option 4** i.e. **x ≤ y**

Equation I	Equation II
$x^2 - 3x + 2 = 0$	$y^2 - 7y + 10 = 0$
$x^2 - 2x - x + 2 = 0$	$y^2 - 5y - 2y + 10 = 0$
$x(x - 2) - 1(x - 2) = 0$	$y(y - 5) - 2(y - 5) = 0$
$(x - 2)(x - 1) = 0$	$(y - 5)(y - 2) = 0$
$x = 1, 2$	$y = 5, 2$

Thus we analyse,

Value of x	Value of y	Result
1	2	x < y
1	5	x < y
2	2	x = y
2	5	x < y

Hence x ≤ y

Q:2 The correct answer is **Option 5** i.e. **x = y or the relationship between x and y cannot be determined.**

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Equation I	Equation II
$2x^2 - 3x - 9 = 0$	$3y^2 + 11y + 6 = 0$
$2x^2 - 6x + 3x - 9 = 0$	$3y^2 + 9y + 2y + 6 = 0$
$2x(x - 3) + 3(x - 3) = 0$	$3y(y + 3) + 2(y + 3) = 0$
$(x - 3)(2x + 3) = 0$	$(y + 3)(3y + 2) = 0$
$x = 3, -3/2$	$y = -3, -2/3$

We can conclude that,

Value of x	Value of y	Result
3	-3	x > y
3	-2/3	x > y
-3/2	-3	x > y
-3/2	-2/3	x < y

Hence, x = y or the relationship between x and y cannot be determined

Q:3 The correct answer is **Option 2** i.e. **x < y.**

Equation I	Equation II
$5x^2 + 4x - 1 = 0$	$2y^2 - 3y + 1 = 0$
$5x^2 + 5x - x - 1 = 0$	$2y^2 - 2y - y + 1 = 0$
$5x(x + 1) - 1(x + 1) = 0$	$2y(y - 1) - 1(y - 1) = 0$
$(x + 1)(5x - 1) = 0$	$(y - 1)(2y - 1) = 0$
$x = 1/5, -1$	$y = 1, 1/2$

We can conclude that,

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Value of x	Value of y	Result
1/5	1	x < y
1/5	1/2	x < y
-1	1	x < y
-1	1/2	x < y

Hence, x < y

Q:4 The correct answer is **option 5** i.e. **x = y or Relationship between x and y cannot be determined**

Equation I	Equation II
$4x^2 - 12x + 9 = 0$	$y^2 + y - 6 = 0$
$4x^2 - 6x - 6x + 9 = 0$	$y^2 + 3y - 2y - 6 = 0$
$4x(x - 3/2) - 6(x - 3/2) = 0$	$y(y + 3) - 2(y + 3) = 0$
$(x - 3/2) (4x - 6) = 0$	$(y + 3) (y - 2) = 0$
x = 3/2, 3/2	y = 2, -3

Thus we analyse,

Value of x	Value of y	Result
3/2	2	x < y
3/2	-3	x > y

Hence x = y or Relationship between x and y cannot be determined

Q:5 The correct answer is **option 1** i.e. **x > y**

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Equation 1	Equation 2
$x^2 - 3x - 4 = 0$	$2y^2 + 11y + 14 = 0$
$x^2 + x - 4x - 4 = 0$	$2y^2 + 11y + 14 = 0$
$x(x + 1) - 4(x + 1) = 0$	$2y(y + 2) + 7(y + 2) = 0$
$(x - 4)(x + 1) = 0$	$(2y + 7)(y + 2) = 0$
$x = 4, -1$	$y = -7/2, -2$

We can analyse,

Value of x	Value of y	Result
4	- 7/2	x > y
4	- 2	x > y
- 1	- 7/2	x > y
- 1	- 2	x > y

Hence, x > y

Q:6 The correct answer is **Option 4** i.e. **x ≤ y**

Equation I	Equation II
$14x - 37\sqrt{x} + 24 = 0$	$8y - 26\sqrt{y} + 21 = 0$
$\Rightarrow 14x - 21\sqrt{x} - 16\sqrt{x} + 24 = 0$	$\Rightarrow 8y - 12\sqrt{y} - 14\sqrt{y} + 21 = 0$
$\Rightarrow 7\sqrt{x}(2\sqrt{x} - 3) - 8(2\sqrt{x} - 3) = 0$	$\Rightarrow 4\sqrt{y}(2\sqrt{y} - 3) - 7(2\sqrt{y} - 3) = 0$
$\Rightarrow (7\sqrt{x} - 8)(2\sqrt{x} - 3) = 0$	$\Rightarrow (4\sqrt{y} - 7)(2\sqrt{y} - 3) = 0$
$\therefore x = 64/49, 9/4$	$\therefore y = 49/16, 9/4$

We can analyse,

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Value of x	Value of y	Result
64/49	49/16	x < y
64/49	9/4	x < y
9/4	49/16	x < y
9/4	9/4	x = y

Hence, **x ≤ y**

Q:7 The correct answer is **Option 2** i.e. **x ≥ y**

Equation I	Equation II
$12x^2 - 71x + 104 = 0$	$24y^2 - 109y + 120 = 0$
$\Rightarrow 12x^2 - 39x - 32x + 104 = 0$	$\Rightarrow 24y^2 - 45y - 64y + 120 = 0$
$\Rightarrow 3x(4x - 13) - 8(4x - 13) = 0$	$\Rightarrow 3y(8y - 15) - 8(8y - 15) = 0$
$\Rightarrow (3x - 8)(4x - 13) = 0$	$\Rightarrow (3y - 8)(8y - 15) = 0$
∴ x = 8/3, 13/4	∴ y = 8/3, 15/8

We can analyse,

Value of x	Value of y	Result
8/3	8/3	x = y
8/3	15/8	x > y
13/4	8/3	x > y
13/4	15/8	x > y

Hence, **x ≥ y**

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Q:8 The correct answer is **Option 5** i.e. **x = y or Relationship between x and y cannot be determined**

Equation I	Equation II
$x^{9/5} \times x^{11/5} \times 18 = 1458x^2$	$(y^{2/9} \div 4)^3 = 4 \div y^{4/3}$
$\Rightarrow x^{20/5} \times 18 = 1458x^2$	$\Rightarrow y^{2/3} \div 64 = 4 \div y^{4/3}$
$\Rightarrow x^2 \times 18 = 1458$	$\Rightarrow y^{(2/3 + 4/3)} = 4 \times 64$
$\Rightarrow x^2 = 81$	$\Rightarrow y^2 = (4 \times 64)$
$\Rightarrow x = \pm 9$	$\therefore y = \pm 16$

We can analyse,

Value of x	Value of y	Result
9	16	x < y
9	-16	x > y
-9	16	x < y
-9	-16	x > y

Hence, **Relationship between x and y cannot be determined**

Q:9 The correct answer is **Option 4** i.e. **x ≤ y**

Equation I	Equation II
$x^2 = 1849$	$(y - 13) = 30$
$\Rightarrow x = \pm 43$	$\Rightarrow y = 43$

We can analyse,

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Value of x	Value of y	Result
43	43	x = y
-43	43	x < y

Hence, **x ≤ y**

Q:10 The correct answer is **option 5** i.e. **x = y or Relationship between x and y cannot be determined**

Equation I	Equation II
$x^2 - 2x - 8 = 0$	$y^2 - 8y + 15 = 0$
$x^2 - 4x + 2x - 8 = 0$	$y^2 - 5y - 3y + 15 = 0$
$x(x - 4) + 2(x - 4) = 0$	$y(y - 5) - 3(y - 5) = 0$
$(x - 4)(x + 2) = 0$	$(y - 5)(y - 3) = 0$
x = 4, -2	y = 5, 3

We can analyse,

Value of x	Value of y	Result
4	5	x < y
4	3	x > y
-2	5	x < y
-2	3	x < y

Hence, **x = y or Relationship between x and y cannot be determined**

So, this is it for today. We will meet again with another new topic. Till then, you can practice the questions again by downloading the PDF of Quadratic Equations.