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Quadratic Equations 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. $6x^2 - 16x - 6 = 0$

II. $y^2/9 - 4 = 0$

1. x > y

2. x < y

3. x ≥ y

4. x ≤ y

5. x = y or relationship between x and y can't be established.

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

Q:2 I. $4\sqrt{2}x^2 + 14x + 6\sqrt{2} = 0$

II. $3\sqrt{5}y^2 - 13y + 2\sqrt{5} = 0$

1. x > y

2. x < y

3. x ≥ y

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4. x ≤ y

5. x = y or relationship between x and y can't be established.

(**Difficulty:** 4, **Estimated Time:** 25 Seconds) This was a hard nut to crack!

Q:3 I. $5x^2 - 11x + 2 = 0$

II. $4y^2 - 1/16 = 0$

1. x > y

2. x < y

3. x ≥ y

4. x ≤ y

5. x = y or relationship between x and y can't be established.

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

Q:4 I. $x^2 - 1/9 = 0$

II. $2y^2 + 13y/2 + 3/2 = 0$

1. x > y

2. x < y

3. x ≥ y

4. x ≤ y

5. x = y or relationship between x and y can't be established.

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

Q:5 I. $x^2 + 10x + 21 = 0$

II. $y^2 - 8y + 12 = 0$

1. x > y

2. x < y

3. x ≤ y

4. x ≥ y

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5. x = y or relationship between x and y can't be established.

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

Q:6 I. $6x^2 + 13x + 2 = 0$

II. $y^2 - 6y + 9 = 0$

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) Should we raise the level of questions?

Q:7 I. $x^2 - 3x - 18 = 0$

II. $3y^2 - 10y - 8 = 0$

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. $8x^2 + 13x - 6 = 0$

II. $10y^2 - 31y + 3 = 0$

1. x < y

2. x > y

3. x ≤ y

4. x ≥ y

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

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(**Difficulty:** 3, **Estimated Time:** 20 Seconds) This was a bit calculative one...

Q:9 I. $x^2 = 2916$

II. $y^2 = 2209$

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) If you are good are square roots....

Q:10 I. $2x^2 - 3x - 2 = 0$

II. $y^2 + 10y + 9 = 0$

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) Did you guess them all correctly?

Answer Key

Let's check out your score in this test.

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

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.

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

Answers and Solutions

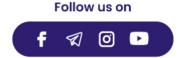**Q:1** The correct answer is **option 5** i.e. **x = y or relationship between x and y can't be established.**

Equation I	Equation II
$6x^2 - 16x - 6 = 0$	$y^2/9 - 4 = 0$
$6x^2 - 18x + 2x - 6 = 0$	$(y/3)^2 - 2^2 = 0$
$6x(x - 3) + 2(x - 3) = 0$	$(y/3 - 2)(y/3 + 2) = 0$
$(6x + 2)(x - 3) = 0$	$y = 6, -6$
$x = -1/3, 3$	$y = 6, -6$

We can analyse,

Value of x	Value of y	Result
-1/3	6	x < y
-1/3	-6	x > y
3	6	x < y
3	-6	x > y

Hence, **x = y or relationship between x and y can't be established.**

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

Equation I	Equation II
$4\sqrt{2}x^2 + 14x + 6\sqrt{2} = 0$	$3\sqrt{5}y^2 - 13y + 2\sqrt{5} = 0$
$4\sqrt{2}x^2 + 8x + 6x + 6\sqrt{2} = 0$	$3\sqrt{5}y^2 - 3y - 10y + 2\sqrt{5} = 0$
$4x(\sqrt{2}x + 2) + 3\sqrt{2}(\sqrt{2}x + 2) = 0$	$3y(\sqrt{5}y - 1) - 2\sqrt{5}(\sqrt{5}y - 1) = 0$
$(4x + 3\sqrt{2})(\sqrt{2}x + 2) = 0$	$(3y - 2\sqrt{5})(\sqrt{5}y - 1) = 0$
$x = -3\sqrt{2}/4, -\sqrt{2}$	$y = 2\sqrt{5}/3, \sqrt{5}/5$

We can analyse,

Value of x	Value of y	Result
$-3\sqrt{2}/4$	$2\sqrt{5}/3$	x < y
$-3\sqrt{2}/4$	$2\sqrt{5}/3$	x < y
$-\sqrt{2}$	$\sqrt{5}/5$	x < y
$-\sqrt{2}$	$\sqrt{5}/5$	x < y

Hence, **x < y**

Q:3 The correct answer is **option 1** i.e. **x > y.**

Equation I	Equation II
$5x^2 - 11x + 2 = 0$	$4y^2 - 1/16 = 0$
$5x^2 - 10x - x + 2 = 0$	$(2y)^2 - (1/4)^2 = 0$
$5x(x - 2) - 1(x - 2) = 0$	$(2y - 1/4)(2y + 1/4) = 0$
$(5x - 1)(x - 2) = 0$	$y = 1/8, -1/8$
$x = 1/5, 2$	$y = 1/8, -1/8$

We can analyse,

Value of x	Value of y	Result
1/5	1/8	x > y
1/5	-1/8	x > y
2	1/8	x > y
2	-1/8	x > y

Hence, **x > y**

Q:4 The correct answer is **option 5** i.e. **x = y or relationship between x and y can't be established.**

Equation I	Equation II
$x^2 - 1/9 = 0$	$2y^2 + 13y/2 + 3/2 = 0$
$x^2 - (1/3)^2 = 0$	$2y^2 + 12y/2 + y/2 + 3/2 = 0$
$(x - 1/3)(x + 1/3) = 0$	$2y^2 + 6y + y/2 + 3/2 = 0$
x = -1/3, 1/3	$2y(y + 3) + 1/2(y + 3) = 0$
x = -1/3, 1/3	y = -1/4, -3

We can analyse,

Value of x	Value of y	Result
-1/3	-1/4	x < y
-1/3	-3	x > y
1/3	-1/4	x > y
1/3	-3	x > y

Hence, **x = y or relationship between x and y can't be established.**

Q:5 The correct answer is **option 2** i.e. **x < y.**

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Equation I	Equation II
$x^2 + 10x + 21 = 0$	$y^2 - 8y + 12 = 0$
$x^2 + 7x + 3x + 21 = 0$	$y^2 - 6y - 2y + 12 = 0$
$x(x + 7) + 3(x + 7) = 0$	$y(y - 6) - 2(y - 6) = 0$
$(x + 3)(x + 7) = 0$	$(y - 2)(y - 6) = 0$
$x = -3, -7$	$y = 2, 6$

We can analyse,

value of x	value of y	Result
-3	2	$x < y$
-3	6	$x < y$
-7	2	$x < y$
-7	6	$x < y$

Hence, **x < y**

Q:6 The correct answer is **option 4** i.e. **x < y.**

Equation I	Equation II
$6x^2 + 13x + 2 = 0$	$y^2 - 6y + 9 = 0$
$6x^2 + 12x + x + 2 = 0$	$y^2 - 3y - 3y + 9 = 0$
$6x(x + 2) + (x + 2) = 0$	$y(y - 3) - 3(y - 3) = 0$
$(x + 2)(6x + 1) = 0$	$(y - 3)(y - 3) = 0$
$x = -2, -1/6$	$y = 3, 3$

We can analyze,

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Value of x	Value of y	Result
-1/6	3	x < y
-2	3	x < y

Hence, x < y

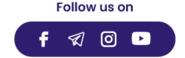**Q:7** The correct answer is **option 5** i.e. **x = y or Relationship between x and y cannot be determined**

Equation I	Equation II
$x^2 - 3x - 18 = 0$	$3y^2 - 10y - 8 = 0$
$x^2 - 6x + 3x - 18 = 0$	$3y^2 - 12y + 2y - 8 = 0$
x(x - 6) + 3(x - 6) = 0	3y(y - 4) + 2(y - 4) = 0
(x - 6) (x + 3) = 0	(3y + 2) (y - 4) = 0
x = -3, 6	y = -2/3, 4

We can analyze,

Value of x	Value of y	Result
-3	-2/3	x < y
-3	4	x < y
6	-2/3	x > y
6	4	x > y

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

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

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Equation I	Equation II
$8x^2 + 13x - 6 = 0$	$10y^2 - 31y + 3 = 0$
$8x^2 - 3x + 16x - 6 = 0$	$10y^2 - y - 30y + 3 = 0$
$4x(2x - 3/4) + 8(2x - 3/4) = 0$	$5y(2y - 1/5) - 15(2y - 1/5) = 0$
$(2x - 3/4)(4x + 8) = 0$	$(2y - 1/5)(5y - 15) = 0$
$x = 3/8, -2$	$y = 1/10, 3$

We can analyse,

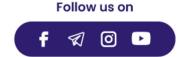| Value of x	Value of y	Result
3/8	1/10	x > y
3/8	3	x < y
-2	1/10	x < y
-2	3	x < y

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

Q:9 The correct answer is **option 5** i.e. **x = y or Relationship between x and y cannot be determined**

Equation I	Equation II
$x^2 = 2916$	$y^2 = 2209$
$x^2 = (54)^2$	$y^2 = (47)^2$
$x = \pm 54$	$y = \pm 47$
$x = +54, -54$	$y = +47, -47$

we can analyse,

Value of x	Value of y	Result
+54	+47	x > y
+54	-47	x > y
-54	+47	x < y
-54	-47	x < y

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

Q:10 The correct answer is **option 1** i.e. **x > y**

Equation I	Equation II
$2x^2 - 3x - 2 = 0$	$y^2 + 10y + 9 = 0$
$2x^2 - 4x + x - 2 = 0$	$y^2 + y + 9y + 9 = 0$
$2x(x - 2) + 1(x - 2) = 0$	$y(y + 1) + 9(y + 1) = 0$
$(2x + 1)(x - 2) = 0$	$(y + 1)(y + 9) = 0$
$x = -1/2, 2$	$y = -1, -9$

We can analyse,

Value of x	Value of y	Result
-1/2	-1	x > y
-1/2	-9	x > y
2	-1	x > y
2	-9	x > y

Hence, x > y

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.

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