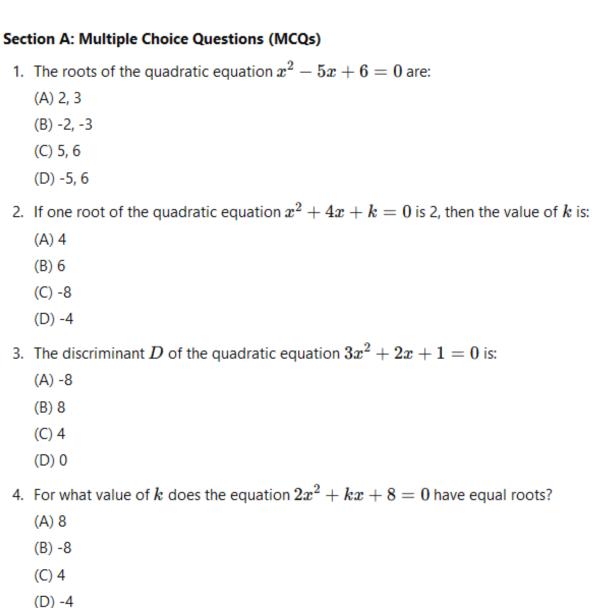


## Class 10 Maths Worksheet

### Chapter 4: Quadratic Equations





# Section B: Short Answer Type Questions (2 Marks)

- 1. Solve the quadratic equation  $x^2-7x+12=0$  by factorization.
- 2. Find the value of k for which the quadratic equation  $2x^2+kx+3=0$  has real and equal roots.
- 3. Determine the nature of roots for the quadratic equation  $x^2 4x + 5 = 0$ .

#### Section C: Long Answer Type Questions (3 Marks)

- 1. Using the quadratic formula, solve  $3x^2 2x 1 = 0$ .
- The product of two consecutive positive integers is 182. Form the quadratic equation and find the integers.
- 3. A train travels a distance of 48 km at a uniform speed. If the speed had been 8 km/h more, it would have taken 1 hour less for the same journey. Find the original speed of the train.

# Section D: Case-Based Questions (4 Marks)

Read the following passage and answer the questions:

Ravi is standing on a hill and throws a ball upward. The height h of the ball (in meters) at any time t (in seconds) is given by the quadratic equation  $h=-5t^2+20t+15$ .

- After how many seconds will the ball reach its maximum height?
- 2. What is the maximum height reached by the ball?
- 3. After how many seconds will the ball hit the ground?



#### Section E: Assertion-Reasoning Questions (1 Mark Each)

**Directions:** In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option:

- (A) Both A and R are true, and R is the correct explanation of A.
- (B) Both A and R are true, but R is not the correct explanation of A.
- (C) A is true, but R is false.
- . (D) A is false, but R is true.
- 1. Assertion (A): The quadratic equation  $2x^2+3x-2=0$  has two distinct real roots. Reason (R): The discriminant of a quadratic equation is given by  $D=b^2-4ac$ .
- 2. Assertion (A): The quadratic equation  $x^2+4x+4=0$  has two equal real roots. Reason (R): The discriminant D of the equation is zero.

# **Answer Key**

MCQs:

- 1. (A)
- 2. (C)
- 3. (A)
- 4. (C)

