



## Quadratic Equations – Questions

Q1) Solve the following quadratic equations by factorising.

a)  $x^2 - 6x - 16 = 0$

d)  $x^2 - 49 = 0$

b)  $x^2 + 10x + 25 = 0$

e)  $x^2 - 3x = 0$

c)  $x^2 - 10x + 16 = 0$

f)  $x^2 - 2x - 24 = 0$

Q2) Solve the following quadratic equations to 2 decimal places.

a)  $x^2 + 7x + 5 = 0$

c)  $x^2 + 4x - 10 = 0$

b)  $5x^2 + 2x - 3 = 0$

d)  $2x^2 - 7x + 4 = 0$

Q3) Determine the nature of the roots of each quadratic equation.

a)  $x^2 - 3x - 3 = 0$

c)  $2x^2 - 5 = 0$

b)  $x^2 + 5x - 7 = 0$

d)  $x^2 - 4x + 6 = 0$

Q4) Use the discriminant to determine the nature of the roots. Then solve the equation using an appropriate method.

a)  $2x^2 - 4x - 6 = 0$

c)  $x^2 - 8x = 0$

b)  $x^2 - 9 = 0$

d)  $x^2 - 18x + 81 = 0$



## Quadratic Equations – Solutions

Q1) a)  $x = 8, x = 2$

c)  $x = 8, x = 2$

e)  $x = 0, x = 3$

b)  $x = -5$

d)  $x = 7, x = -7$

f)  $x = -4, x = 6$

Q2) a)  $x = -0.81$  and  $x = -6.19$

b)  $x = 3$  and  $x = -5$

c)  $x = 1.74$  and  $x = -5.74$

d)  $x = 2.78$  and  $x = 0.72$

Q3) a) Two real roots

b) Two real roots

c) Two real roots

d) No real roots

Q4) a) There are two real roots.

$x = -1, x = 3$

c) There are two real roots.

$x = 0, x = 8$

b) There are two real roots.

$x = -3, x = 3$

d) There is one real root.

$x = 9$