Q:1 Directions: The roots of a quadratic equation are given:

6 and 12

If the quadratic equation formed by the given roots is divided by 0.5 then, find the square of the negative root.

1. 16
2. 64
3. 49
4. 36
5. 25

Q:2 Directions: The roots of a quadratic equation are given:

6 and 12

If the quadratic equation formed by the given roots is divided by 0.5 then, find the square of the sum of the positive roots of both the equations.

1. 529
2. 576
3. 676
4. 625
5. 484

Q:3 Directions: Three quadratic equations are as follows.

A. $3x^2 + 8x - (4)^2 = 0$
B. $x^2 + 11x + 28 = 0$
C. $2x^2 - 15x + 17 = 0$

Find the sum of the square of negative roots.

1. 87
2. 85
3. 83
4. 80
5. 81

Q:4 Directions: Three quadratic equations are as follows.

A. $3x^2 + 8x - (4)^2 = 0$
B. $x^2 + 11x + 28 = 0$
C. $2x^2 - 15x + 17 = 0$
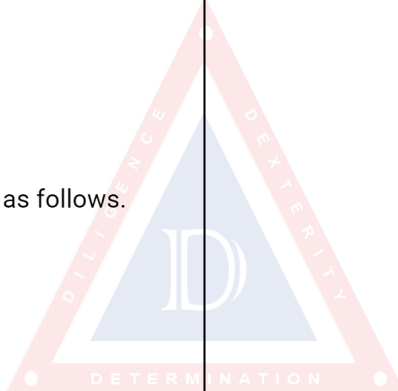
Find the sum of positive roots of the equation.

1. 65/6
2. 61/6
3. 24/7
4. 63/4
5. 67/6

Q:5 Directions: Three quadratic equations are as follows.

A. $3x^2 + 8x - (4)^2 = 0$
B. $x^2 + 11x + 28 = 0$
C. $2x^2 - 15x + 17 = 0$

Find the sum of the smallest root and the greatest root.

1. 4.5
2. 2.5
3. 1.5
4. 0.5
5. 1

1

Answer Key

1. (4)	**2.** (2)	**3.** (5)	**4.** (1)	**5.** (3)

Answers and Solutions

Q:1 The correct answer is **Option 4** i.e. **36.**
The standard form of the equation is a - b + c = 0 and,
b will be in the form of b_1/a, b_2/a
Thus, from the given roots i.e. 6 and 12 quadratic equation will be
$0.5x^2 - 3x - 36$ [you can recheck its roots by solving this quadratic equation]
Now, according to the question
This quadratic equation will be divided by 0.5 then, the newly formed quadratic equation will be
$x^2 - 6x - 72 = 0$
$x^2 - 12x + 6x - 72 = 0$
$x(x - 12) + 6(x - 12) = 0$
$(x + 6)(x - 12) = 0$
x = - 6, 12
The square of the negative root = $(-6)^2 = 36$

Q:2 The correct answer is **Option 2** i.e. **576.**
The standard form of the equation is a - b + c = 0 and,
b will be in the form of b_1/a, b_2/a
Thus, from the given roots i.e. 6 and 12 quadratic equation will be
$0.5x^2 - 3x - 36$ [you can recheck its roots by solving this quadratic equation]
Now, according to the question
This quadratic equation will be divided by 0.5 then, the newly formed quadratic equation will be
$x^2 - 6x - 72 = 0$
$x^2 - 12x + 6x - 72 = 0$
$x(x - 12) + 6(x - 12) = 0$
$(x + 6)(x - 12) = 0$
x = - 6, 12
The square of the sum of the positive roots of both the equations = 12 + 12 = 24
Square of 24 = 576

Q:3 The correct answer is **Option 5** i.e. **81.**
A. $3x^2 + 8x - (4)^2 = 0$
$3x^2 + 8x - 16 = 0$
$3x^2 + 12x - 4x - 16 = 0$
$3x(x + 4) - 4(x + 4) = 0$
$(3x - 4)(x + 4) = 0$
x = 4/3, -4
B. $x^2 + 11x + 28 = 0$
$x^2 + 7x + 4x + 28 = 0$
$x(x + 7) + 4(x + 7) = 0$
$(x + 4)(x + 7) = 0$
x = - 4, -7
C. $2x^2 - 15x - 17 = 0$
$2x^2 - 17x + 2x - 17 = 0$
$x(2x - 17) - 1(2x - 17) = 0$
$(x - 1)(2x - 17) = 0$
x = 1, 17/2
Now, according to the question
Sum of the square of negative roots = $(-4)^2 + (-4)^2 + (-7)^2$
= 16 + 16 + 49 = 81

Q:4 The correct answer is **Option 1** i.e. **65/6.**
A. $3x^2 + 8x - (4)^2 = 0$
$3x^2 + 8x - 16 = 0$
$3x^2 + 12x - 4x - 16 = 0$
$3x(x + 4) - 4(x + 4) = 0$
$(3x - 4)(x + 4) = 0$
x = 4/3, -4
B. $x^2 + 11x + 28 = 0$
$x^2 + 7x + 4x + 28 = 0$
$x(x + 7) + 4(x + 7) = 0$
$(x + 4)(x + 7) = 0$
x = - 4, -7
C. $2x^2 - 15x - 17 = 0$
$2x^2 - 17x + 2x - 17 = 0$
$x(2x - 17) - 1(2x - 17) = 0$
$(x - 1)(2x - 17) = 0$
x = 1, 17/2
Now, according to the question
Sum of positive roots = 4/3 + 1 + 17/2 = (8 + 6 + 51)/6 = 65/6

Q:5 The correct answer is **Option 3** i.e. **1.5.**
A. $3x^2 + 8x - (4)^2 = 0$
$3x^2 + 8x - 16 = 0$
$3x^2 + 12x - 4x - 16 = 0$
$3x(x + 4) - 4(x + 4) = 0$
$(3x - 4)(x + 4) = 0$
x = 4/3, -4
B. $x^2 + 11x + 28 = 0$

$x^2 + 7x + 4x + 28 = 0$

$x(x + 7) + 4(x + 7) = 0$

$(x + 4)(x + 7) = 0$

$x = -4, -7$

C. $2x^2 - 15x - 17 = 0$

$2x^2 - 17x + 2x - 17 = 0$

$x(2x - 17) - 1(2x - 17) = 0$

$(x - 1)(2x - 17) = 0$

$x = 1, 17/2$

Now, according to the question

The smallest root = -7

The largest root = 17/2 = 8.5

Sum = 8.5 + (-7) = 8.5 - 7 = 1.5