Q:1 Directions: Three quadratic equations are as follows.
A. $5x^2 + 11x - (4)^2 = 0$
B. $6x^2 + 28x + 23 = 0$
C. $2x^2 - 15x + 27 = 0$
Find the difference between the roots of equation A.
1. 23/9
2. 21/5
3. 22/7
4. 21/4
5. 17/5

Q:2 Directions: Three quadratic equations are as follows.
A. $5x^2 + 11x - (4)^2 = 0$
B. $6x^2 + 28x + 23 = 0$
C. $2x^2 - 15x + 27 = 0$
Find the sum of the roots of equation C.
1. 7/3
2. 15/7
3. 14/3
4. 15/2
5. 17/3

Q:3 Directions: Three quadratic equations are as follows.
A. $5x^2 + 11x - (4)^2 = 0$
B. $6x^2 + 28x + 23 = 0$
C. $2x^2 - 15x + 27 = 0$
Find the value of 6 times the sum of roots of equation B.
1. 27
2. - 27
3. - 29
4. - 25
5. 29

Q:4 Directions: The roots of a quadratic equation are given:
17/8 and -1
If the quadratic equation derived from these given roots is divided by 2 and - 0.5x - 0.5 is added to it then, which root is common in both the equations?
1. -1
2. -2
3. 1
4. 2
5. 1/2

Q:5 Directions: The roots of a quadratic equation are given:
17/8 and -1
Find the ratio of the positive roots of the equations.
1. 12 : 17
2. 17 : 19
3. 21 : 23
4. 15 : 17
5. 17 : 18

Asutosh Mukherjee Road, College Para, Hathi More, Siliguri, West Bengal
+91 - 8436586516, +91-8436900456
thedhronas@gmail.com
thedronas.com

Answer Key

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

Answers and Solutions

Q:1 The correct answer is **Option 2** i.e. **21/5.**
A. $5x^2 + 11x - (4)^2 = 0$
$5x^2 + 11x - 16 = 0$
$5x^2 + 16x - 5x - 16 = 0$
$x(5x + 16) - 1(5x + 16) = 0$
$(x - 1)(5x + 16) = 0$
$x = 1, -16/5$
B. $6x^2 + 28x + 23 = 0$
$6x^2 + 6x + 23x + 23 = 0$
$6x(x + 1) + 23(x + 1) = 0$
$(6x + 23)(x + 1) = 0$
$x = -23/6, -1$
C. $2x^2 - 15x + 27 = 0$
$2x^2 - 6x - 9x + 27 = 0$
$2x(x - 3) - 9(x - 3) = 0$
$(2x - 9)(x - 3) = 0$
$x = 9/2, 3$
Now, according to the question
Roots of equation A = 1, -16/5
Difference = $1 - (-16/5) = 1 + 16/5 = (5 + 16)/5 = 21/5$

Q:2 The correct answer is **Option 4** i.e. **15/2.**
A. $5x^2 + 11x - (4)^2 = 0$
$5x^2 + 11x - 16 = 0$
$5x^2 + 16x - 5x - 16 = 0$
$x(5x + 16) - 1(5x + 16) = 0$
$(x - 1)(5x + 16) = 0$
$x = 1, -16/5$
B. $6x^2 + 28x + 23 = 0$
$6x^2 + 6x + 23x + 23 = 0$
$6x(x + 1) + 23(x + 1) = 0$
$(6x + 23)(x + 1) = 0$
$x = -23/6, -1$
C. $2x^2 - 15x + 27 = 0$
$2x^2 - 6x - 9x + 27 = 0$
$2x(x - 3) - 9(x - 3) = 0$
$(2x - 9)(x - 3) = 0$
$x = 9/2, 3$
Now, according to the question
Roots of equation C = 9/2, 3
Sum = $9/2 + 3 = (9 + 6)/2 = 15/2$

Q:3 The correct answer is **Option 3** i.e. **-29.**
A. $5x^2 + 11x - (4)^2 = 0$
$5x^2 + 11x - 16 = 0$
$5x^2 + 16x - 5x - 16 = 0$
$x(5x + 16) - 1(5x + 16) = 0$
$(x - 1)(5x + 16) = 0$
$x = 1, -16/5$
B. $6x^2 + 28x + 23 = 0$
$6x^2 + 6x + 23x + 23 = 0$
$6x(x + 1) + 23(x + 1) = 0$
$(6x + 23)(x + 1) = 0$
$x = -23/6, -1$
C. $2x^2 - 15x + 27 = 0$
$2x^2 - 6x - 9x + 27 = 0$
$2x(x - 3) - 9(x - 3) = 0$
$(2x - 9)(x - 3) = 0$
$x = 9/2, 3$
Now, according to the question
Sum of roots of equation B = $(-23/6) + (-1) = -23/6 - 1 = (-23 - 6)/6 = -29/6$
6 times of the sum = $6 \times -29/6 = -29$

Q:4 The correct answer is **Option 1** i.e. **-1.**
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. 1/4 and 3/5 quadratic equation will be
$8x^2 - 9x - 17$ [you can recheck its roots by solving this quadratic equation]
Now, according to the question
This quadratic equation will be divided by 2 and -0.5x - 0.5 is added to it then, the newly formed quadratic equation will be
$8/2x^2 - 9/2x - 17/2 = 0$
$4x^2 - 4.5x - 8.5 = 0$
-0.5x - 0.5 is added
$4x^2 - 5x - 9 = 0$
$4x^2 - 9x + 4x - 9 = 0$
$x(4x - 9) + 1(4x - 9) = 0$
$(x + 1)(4x - 9) = 0$
$x = -1, 9/4$
The common root in both the equations is -1

Asutosh Mukherjee Road, College Para, Hathi More, Siliguri, West Bengal
+91 - 8436586516, +91-8436900456
thedhronas@gmail.com
thedronas.com

Q:5 The correct answer is **Option 5** i.e. **17 : 18.**

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. 1/4 and 3/5 quadratic equation will be

$8x^2 - 9x - 17$ [you can recheck its roots by solving this quadratic equation]

Now, according to the question

This quadratic equation will be divided by 2 and -0.5x - 0.5 is added to it then, the newly formed quadratic equation will be

$8/2x^2 - 9/2x - 17/2 = 0$

$4x^2 - 4.5x - 8.5 = 0$

-0.5x - 0.5 is added

$4x^2 - 5x - 9 = 0$

$4x^2 - 9x + 4x - 9 = 0$

$x(4x - 9) + 1(4x - 9) = 0$

$(x + 1)(4x - 9) = 0$

$x = -1, 9/4$

The ratio of positive roots = 17/8 : 9/4 = 17/8 : 18/8 = 17 : 18

Asutosh Mukherjee Road, College Para, Hathi More, Siliguri, West Bengal
+91 - 8436586516, +91-8436900456
thedhronas@gmail.com
thedronas.com