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Problems on number Questions for SSC and Railway Exams – Problems on number Quiz at Smartkeeda.

Problems on number Quiz 1

Directions: Kindly study the following Questions carefully and choose the right answer:

1. A number is as much greater than 36 as is less than 86. Find the number :

- A. 38 B. 43 C. 61 D. 73

2. Find a number such that when 15 is subtracted from 7 times the number, the result is 10 more than twice the number.

- A. 5 B. 10 C. 15 D. 20

3. The sum of the rational and its reciprocal is $13/6$. Find the number.

- A. $5/3$ B. 2 C. $3/2$ D. 5

4. The sum of two numbers is 184. If one-third of the one exceeds one - seventh of the other by 8, find the smaller number.

- A. 65 B. 68 C. 70 D. 72

5. The difference of two numbers is 11 and one-fifth of their sum is 9. Find the numbers.

- A. 28, 18 B. 28, 17 C. 13, 25 D. 25, 22

6. If the sum of two numbers is 42 and their product is 437, then find the absolute difference between the numbers.

- A. 4 B. 6 C. 8 D. 12

7. The sum of two numbers is 15 and the sum of their squares is 113. Find the numbers.

- A. 3 and 4 B. 4 and 6 C. 7 and 8 D. 8 and 10

8. The average of four consecutive even numbers is 27. Find the largest of these numbers.

- A. 22 B. 24 C. 27 D. 30

9. The sum of the squares of three consecutive odd numbers is 2531. Find the numbers.

- A. 21, 23 and 25 B. 15, 17 and 20 C. 27, 29 and 31 D. 29, 31 and 33

10. Out of two numbers, 4 times the smaller one is less than 3 times the larger one by 5, If the sum of the numbers is larger than 6 times their difference by 6, find the two numbers.

- A. 55 and 58 B. 23 and 28 C. 59 and 43 D. 65 and 67

Correct Answers:

1	2	3	4	5	6	7	8	9	10
C	A	C	D	B	A	C	D	C	C

Explanations:

1. Let the number be z . then, $z - 36 = 86 - z$

$$\Rightarrow 2z = 86 + 36 \Rightarrow 2z = 122.$$

$$\Rightarrow z = 61.$$

Hence, the required number is 61.

Hence, option C is correct.

2. Let, the number be z , Then, $7z - 15 = 2z + 10$

$$\Rightarrow 5z = 25 \Leftrightarrow z = 5.$$

Hence, the required number is 5.

Hence, option A is correct.

3. Smart Approach:

We can easily solve this question by applying the 'Hit & Trial' approach.

The condition says that sum of the numbers and its reciprocal must be $(13/6)$ and in the 1st option, the sum of

$$\frac{5}{3}(\text{the num}) + \frac{3}{5}(\text{its reciprocal}) \text{ will give us } \frac{34}{15}.$$

Option 'A' hence gets eliminated.

the 2nd option, the sum of

$$2 + \frac{1}{2} = \frac{5}{2}$$

Option 'B' hence gets eliminated too.

the 3rd option, the sum of

$$\frac{3}{2} + \frac{2}{3} = \frac{13}{6}.$$

Option 'C' hence is the correct answer.

Traditional Approach:

Given expression:'

$$\text{Then, } z + \frac{1}{z} = \frac{13}{6}$$

$$\Rightarrow \frac{z^2 + 1}{z} = \frac{13}{6}.$$

$$\Rightarrow 6z^2 - 13z + 6 = 0$$

$$\Rightarrow 6z^2 - 9z - 4z + 6 = 0 \Leftrightarrow (3z - 2)(2z - 3) = 0$$

$$\Rightarrow z = 2/3 \text{ or } 3/2.$$

Hence, option C is correct.

4. Let the number be z and $(184 - z)$. then,

$$\Rightarrow \frac{z}{3} - \frac{(184 - z)}{7} = 8.$$

$$\Rightarrow 7z - 3(184 - z) = 168$$

$$\Rightarrow 10z = 720$$

$$\Rightarrow z = 72.$$

Hence, option D is correct.

5. Let the numbers be x and y . then,

$$x - y = 11 \quad \dots(1) \quad \text{and,}$$

$$\Rightarrow \frac{1}{5}(x + y) = 9$$

$$\Rightarrow x + y = 45 \quad \dots(2)$$

Adding (1) and (2) we get : $2x = 56$ or $x = 28$. putting $x = 28$ in (1), we get : $y = 17$.

Hence, the numbers are 28 and 17.

Hence, option B is correct.

6. Let the number be x and y . then, $x + y = 42$ and $xy = 437$.

$$x - y = \sqrt{(x + y)^2 - 4xy}$$

$$\Rightarrow \sqrt{(42)^2 - 4 \times 437} \Rightarrow \sqrt{1764 - 1748}$$

$$\Rightarrow \sqrt{16} = 4$$

So, the required difference = 4.

Hence, option A is correct.

7. Let the numbers be x and $(15 - x)$.

$$\text{Then, } x^2 + (15 - x)^2 = 113 \Leftrightarrow x^2 + 225 + x^2 - 30x = 113$$

$$\Rightarrow 2x^2 - 30x + 112 = 0 \Leftrightarrow x^2 - 15x + 56 = 0$$

$$\Rightarrow (x - 7)(x - 8) = 0 \Leftrightarrow x = 7 \text{ and } x = 8.$$

So, the numbers are 7 and 8.

Hence, option C is correct.

8. Let the four consecutive even numbers be $x, x + 2, x + 4$ and $x + 6$.

Then, sum of these numbers = $(27 \times 4) = 108$.

So, $x + (x + 2) + (x + 4) + (x + 6) = 108$ or $4x = 96$ or $x = 24$.

So, the largest number = $(x + 6) = 30$.

Hence, option D is correct.

9. Let the number be $x, x + 2$ and $x + 4$.

Then, $x^2 + (x + 2)^2 + (x + 4)^2 = 2531 \Leftrightarrow 3x^2 + 12x - 2511 = 0$

$\Rightarrow x^2 + 4x - 837 = 0 \Leftrightarrow (x - 27)(x + 31) = 0 \Leftrightarrow x = 27$.

Hence, the required numbers are 27, 29 and 31.

Hence, option C is correct.

10. Let the number be x and y , such that $x > y$.

Then, $3x - 4y = 5$ (1) and $(x + y) - 6(x - y) = 6$

$\Rightarrow -5x + 7y = 6$ (2)

Solving (1) and (2), we get : $x = 59$ and $y = 43$.

Hence, the required numbers are 59 and 43.

Hence, option C is correct.



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