Problems on number Questions for Bank Exams.

Problems on number Quiz 4

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

1. The cost of 1 dozen banana is Rs. 72 and the cost of one apple is 50% more than the cost of one banana. Anmol purchased x banana and (x + 4) apples and spent Rs. 186. Find the total number of fruits that he purchased.

A. 16 B. 20 C. 24 D. 30 E. None of these

2. If the numerator of a fraction is increased by 150% and the denominator of a fraction increased by 200%, fraction becomes 10/19. Find the fraction.

A. $\frac{12}{17}$ B. $\frac{10}{16}$ C. $\frac{12}{19}$ D. $\frac{9}{11}$ E. None of these

3. The numerator of a fraction is decreased by 50% and the denominator is increased by 200%. If the resultant fraction is 5/2, find the 3/ 20th of the original fraction.

A. $\frac{9}{4}$ B. $\frac{5}{3}$ C. $\frac{2}{5}$ D. $\frac{3}{5}$ E. None of these

4. Sum of 4 consecutive even numbers is greater than three consecutive odd numbers by 81. If the sum of the least odd and even numbers is 59 then find the sum of largest odd and even numbers.

A.69 B. 53 C. 65 D. 72 E. None of these

5. If the product of two consecutive even numbers is 5328, then what is the larger number?

A. 64 B. 74 C. 72 D. 76 E. None of these

6. Kavita spends 2/5th of her salary on groceries and 3/10th of the remaining on her clothes. If she saves Rs. 8400, what is her monthly salary?

A. 16000 B. 18000 C. 20000 D. 24000 E. None of these

7. A number when divided by 627 leaves a remainder 43. By dividing the same number of 19, the remainder will be

A. 32 B. 43 C. 13 D. 5 E. 7

8. In a two digit positive number, the units digit is equal to the square of tens digit. The Sum of the original number and the number formed by interchanging the digits is 66. What is 75% of the original number?

A. 16 B. 18 C. 15 D. 22 E. None of these

9. The ratio of two numbers is 7 : 4. If 8 is added to both the numbers ratio becomes 13 : 8, what is the smaller number?

A.40 B. 56 C. 38 D. 52 E. 50

10. Two numbers are in the ratio of 8 : 11. The difference between the squares of the numbers is 228. Which of the following pair of numbers satisfy the given conditions?

A. 16, 20 B. 18, 22 C. 16, 22 D. – 16, – 22 E. Both (C) and (D)

Correct Answers:

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

Explanations:

1.

Cost of one banana = $\frac{72}{12}$ = 6 Rs.

Cost of one apple = 6 × 150% = 9 Rs.

According to the question,

6x + 9 (x + 4) = 186

6x + 9x + 36 = 186

15x = 186 – 36

15x = 150

x = 10

He purchased 10 bananas and 14 apples.

Total fruits = 10 + 14 = 24

Hence, option C is correct.

2.

Let fraction = $\frac{x}{y}$

$\frac{x \times 250\%}{y \times 300\%} = \frac{10}{19}$

$\frac{250x}{300y} = \frac{10}{19}$

$\frac{x}{y} = \frac{10}{19} \times \frac{300}{250}$

$\frac{x}{y} = \frac{12}{19}$

Hence, option C is correct..

3.

Let the fraction = $\frac{x}{y}$

According to the question,

$\frac{x - 50\% \text{ of } x}{y + 200\% \text{ of } y} = \frac{5}{2}$

$$\frac{x - \frac{x}{2}}{y + 2y} = \frac{5}{2}$$

$$\frac{\frac{2x - x}{2}}{3y} = \frac{5}{2}$$

$$\frac{\frac{x}{2}}{3y} = \frac{5}{2}$$

$$\frac{x}{6y} = \frac{5}{2}$$

$$\Rightarrow \frac{x}{y} = \frac{30}{2} = \frac{15}{1}$$

3/20th of the original fraction = $\frac{15}{1} \times \frac{3}{20}$

$= \frac{9}{4}$

Hence, option A is correct.

4. Method I:

Let 4 consecutive even numbers = x, x + 2, x + 4, x + 6

3 consecutive odd numbers = y, y + 2, y + 4

According to the question,

(x + x + 2 + x + 4 + x + 6) – (y + y + 2 + y + 4) = 81

4x + 12 – 3y – 6 = 81

4x – 3y = 75 1

sum of least odd and even numbers = 59

x + y = 59 2

Equation 1 + (Equation 2 × 3)

7x = 252

x = 36

Least odd number = 59 – 36 = 23, least even number = 36

Largest even number = 36 + 6 = 42, Largest odd number = 23 + 4 = 27

Sum = 42 + 27 = 69

Method II:

Let 4 consecutive even numbers = x, x + 2, x + 4, x + 6

3 consecutive odd numbers = y, y + 2, y + 4

sum of least odd and even numbers = 59

x + y = 59

Sum of the largest odd and even numbers = x + 6 + y + 4

= x + y + 10

= 59 + 10 = 69

Hence, option A is correct.

5. Let the larger number be x
Then, smaller number = x – 2
Now, x(x – 2) = 5328
Or, $x^2 – 2x – 5328 = 0$
Or, $x^2 – 74x + 72x – 5328 = 0$
Or, x(x – 74) + 72(x – 74) = 0
∴ x = 74, –72
Therefore, the higher number = 74
Hence, option B is correct.

Intuitive Approach:
Option A: 64
Therefore, the smaller number must be 62, but we can infer that we won't be getting a number as big as 5328 even if we multiply 74 64 by 62. Option A thus gets eliminated.

Option B: 74
Therefore, the smaller number must be 72. Further, the product of the unit digits of both the smaller and the greater number is also 8 which matches that of the given product.
We can multiply and confirm whether it gives us the resultant number or not.
72 x 74 = 5328
It confirms that option B is the correct answer.

Option C: 72
If the larger number is 72, the smaller one must be 70. But if we multiply these two we'll get the unit digit as zero. Option C gets eliminated here.

Option D: 76
If the larger number is 76, the smaller one must be 74. But if we multiply these two, we'll get the unit digit as 4. Option D also gets eliminated.

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6. Let the monthly salary is Rs. x

The amount spent is $\frac{2}{5}$x. So remaining is $\frac{3}{5}$x.

Now the expenditure on clothes is $\frac{3}{10}$ on the remaining $\frac{3}{5}$x

So the final saving is $\frac{3x}{5} \times \frac{7}{10} = \frac{21x}{50}$

This is equated to 8400.

$\frac{21x}{50} = 8400$
$\Rightarrow$ x = 20000
Hence, option C is correct.

7. Required remainder = 627 × Q + 43

Now, if the number is divided by 19 then the remainder

$= \frac{627 \times Q + 43}{19}$

∴ Remainder = 43 – 38 = 5

Hence, remainder will be 5.

Hence, option D is correct.

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8. Let tens digit be x and units digit = x^2

Original number = $10x + x^2$

Interchanging the digits,

then tens digit = x^2 and units digit = x

New number = $(10x^2 + x)$

As per the question,

$(10x^2 + x) + (10x + x^2) = 66$

$\Rightarrow 10x^2 + x + 10x + x^2 = 66$

$\Rightarrow 11x^2 + 11x = 66$

$\Rightarrow 11(x^2 + x) = 66$

$\Rightarrow x^2 + 3x – 2x – 6 = 0$

$\Rightarrow x(x + 3) – 2(x + 3) = 0$

$\Rightarrow (x – 2)(x + 3) = 0$

∴ x = 2, **–3**

∴ Original number = $10x + x^2 = 10 \times 2 + 2^2 = 24$

∴ Reqd. number = $24 \times \frac{75}{100} = 18$

Hence, option B is correct.

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9. Let the two numbers be 7x and 4x respectively.

$\frac{7x + 8}{4x + 8} = \frac{13}{8}$

∴ $56x + 64 = 52x + 104$

∴ $4x = 40$

∴ $x = 10$

The numbers are $7x = 7 \times 10 = 70$ and $4x = 4 \times 10 = 40$

Thus, the smaller number is 40.

Hence, option A is correct.

10. Let the numbers be 8x and 11x

$(11x)^2 - (8x)^2 = 228$

$121x^2 - 64x^2 = 228$

$57x^2 = 228$

$x^2 = 4$

$\therefore$ $x = \pm 2$

$\therefore$ Numbers are 16, 22 or −16, −22.

Hence, option E is correct.