Q:1 Given below are three statements based on one condition. Solve all the statements and choose which of the following statements is/are correct.
In a class of 50 students, the average score in a math test is 75. However, there are two distinct groups of students with varying performance. The first group of 25 students has an average score of 95, while the second group of 25 students has an average score of 65.
I. The total score of the first group of students is 2375.
II. The total score of the class is 3750.
III. If the first group of students received an additional bonus point, raising their average to 96, and the second group's average remained the same, then, the new average of the whole class is 80.5.
1. Only Statement (I) is correct
2. Only Statement (III) is correct
3. Only Statement (II) is correct
4. Both Statement (I) and (III) are correct
5. All are correct

Q:2 Given below are three statements based on one condition. Solve all the statements and choose which of the following statements is/are incorrect.
In a school, the ratio of the number of boys to the number of girls is 7 : 4. There are a total of 220 students in the school.
I. The number of boys in the school is 140
II. If the number of boys increases by 20%, and the number of girls remains the same, then the new ratio of boys to girls is 21 : 10.
III. If each girl receives a scholarship of Rs.50, and each boy receives a scholarship of Rs.20, the total amount of scholarship money given to all students in the school is Rs.6400.
1. Only Statement (I) is incorrect
2. Only Statement (II) is incorrect
3. Only Statement (III) is incorrect
4. Both statements (III) and (II) are incorrect
5. Both statements (II) and (I) are incorrect

Q:3 Given below are three statements based on one condition. Solve all the statements and choose which of the following statements is/are correct.
The price of the camera originally was Rs.145000, but due to the Diwali sale it's on sale for 25% off
I. Amount paid after the discount is Rs.108750.
II. The amount saved by the customer is Rs.36200
III. If another shopkeeper gives two successive discounts of 15% and 10% on the camera then, the amount paid by the customer will be Rs.2175 more than the 25% discount.
1. Only Statement (III) is correct
2. Only Statement (II) is correct
3. Both statements (III) and (II) are correct
4. Both statements (I) and (II) are correct
5. All are correct

Q:4 Given below are three statements based on one condition. Solve all the statements and choose how many statements is/are correct.
Three men M, N, and, O can fill the well in 12, 21, and 15 hours respectively
I. The Time taken by N and O to fill the well is 8.75 hours.
II. The time taken by M to fill half the well with 1/5th of his efficiency is 30 hours
III. The time taken by all three to fill the well is 5 hours approx.
1. Only One
2. Two
3. All are correct
4. None
5. Either statement (I) or (II) is correct

Q:5 Given below are three statements based on one condition. Solve all the statements and choose which of the following statements is/are correct.
If a 10-digit number 564y15482x is divided by 44 where x is the natural number and $x < 5$ then,
I. Value of $x = y$
II. Value of $\sqrt{xy}$ is 5
III. Value of $2x + y/2$ is 10
1. Only Statement (I) is correct
2. Only Statement (III) is correct
3. Both statements (III) and (II) are correct
4. Both statements (I) and (III) are correct
5. All are correct

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Answer Key

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

Answers and Solutions

Q:1 The correct answer is **Option 5** i.e. **All are correct.**

Statement (I):

The first group of 25 students had an average score of 95

So, the total score of first group students = 25 × 95 = 2375

Statement (II):

In a class of 50 students, the average score on a math test is 75

So, the total score of the class = 50 × 75 = 3750

Statement (III):

If the average of the first group is increased to 96

The total score of first group students = 25 × 96 = 2400

The total score of second group students = 25 × 65 = 1625

The combined total score = Total score of the first group + Total score of the second group = 2400 + 1625 = 4025

New overall class average = Combined total score/Total number of students = 4000/50 = 80.5

Q:2 The correct answer is **Option 3** i.e. **Only Statement (III) is incorrect.**

The ratio of the number of boys to the number of girls is 7 : 4

There are a total of 220 students in the school

Statement(I):

Boys/Total Students = 7/(7 + 4)

Boys/220 = 7/11

Boys = (7/11) × 220

So,

The number of boys = 140

Statement(II):

If the number of boys increases by 20%, we must calculate the new number.

120% of 140 boys = (120/100) × 140 = 168

The new number of boys is 168

Number of girls = (4/11) × 220 = 80 [remains same]

The new ratio of boys to girls is 168 : 80 = 21 : 10

Statement(III):

For each girl: Rs.50, For each boy: Rs.20

Total scholarship money = (Number of girls × Rs.50) + (Number of boys × Rs.20)

Total scholarship money = (80 × 50) + (140 × 20)

Total scholarship money = Rs.4000 + Rs.2800

Total scholarship money = Rs.6800

Q:3 The correct answer is **Option 2** i.e. **Only Statement (II) is correct.**

The original price of the camera = Rs.145000

Discount = 25%

Statement(I):

Discount amount = 75% of Rs.145000

Discount = 0.75 × Rs.145000 = Rs.108750

Statement(II):

Amount saved by the customer = (145000 - 108750) = Rs.36250

Statement(III):

If another shopkeeper gives two successive discounts of 15% and 10% on the camera

= - 15 + (-10) + 15 × 10/100 = -25 + 150/100 = -25 + 1.5 = - 23.5% discount [negative sign indicates discounts]

Amount paid = 145000 × (100 - 23.5)% = Rs.110925

Thus,

The amount paid by the customer more than a 25% discount is

110925 - 108750 = Rs.2175

Q:4 The correct answer is **Option 3** i.e. **All are correct.**

L.C.M (12, 21, and, 15) = 420

The efficiency of M = 420/12 = 35 units

The efficiency of N = 420/21 = 20 units

The efficiency of O = 420/15 = 28 units

Statement(I):

The efficiency of N and O = 48 units

Time taken = 420/48 = 8.75 hours

Statement(II):

Time taken by M to fill half the well with 1/5th of his efficiency

Half capacity of the well = 420/2 = 210 units

$1/5^{th}$ efficiency of M = 1/5 × 35 = 7 units

Time taken = 210/7 = 30 hours

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Statement(III):
Time taken by all three to fill the well = 420/(35 + 20 + 28) = 420/83 = 5.06 hours = 5 hours approx

Q:5 The correct answer is **Option 3** i.e. **Both statements (I) and (III) are correct.**
564y15482x is divisible by 44
Hence, it is also divisible by 4 and 11
Divisibility Rule of 4:- If the number formed by the last two digits in a number is divisible by 4, the original number is divisible by 4.
2x must be divisible by 4 [x < 5]
So, x = 4
Divisibility Rule of 11:- If the difference between the sum of digits at the odd position and the sum of digits at the even position in a number is 0 or 11.
564y15482x
The sum of digits at odd position = 5 + 4 + 1 + 4 + 2 = 16
The sum of digits at even position = 6 + y + 5 + 8 + 4 = 23 + y
23 + y - 16 = 7 + y
So, y = 4
Statement (I):
Value of x = y = 4
Statement (II):
√xy = √16 = 4 (not true)
Statement (III):
2x + y/2 = 2 × 4 + 4/2 = 8 + 2 = 10

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