Q:1 Average age of a class of 23 students is 21 years and when ages of a principal and a teacher is also added, then average age is increased by 2 years. If principal is 14 years older to teacher, then what will be the average age of class when only age of teacher is added?
1. 20.75 years
2. 21.25 years
3. 20.25 years
4. 21.75 years
5. 22.25 years

Q:2 Average age of a group of 36 students is 28 years. If the average age of 24 students in the group is 31 years, then find the average of the remaining students in the group.
1. 22 years
2. 23 years
3. 24 years
4. 25 years
5. 26 years

Q:3 The average score of a class of 60 students, in an exam, was 43. The average score of the students who had passed is 52 and the average score of the students who had failed is 16. How many students passed and failed the exam?
1. 45 and 15
2. 40 and 15
3. 55 and 5
4. 35 and 25
5. 30 and 30

Q:4 In a boarding school, water in the tank is enough for 'x' students and average consumption of water per student is 4.5 liters. If next day, 11 more students join the school and average consumption of water per student is decreased by 20% but total consumption remained same. What will be the value of 'x'?
1. 42
2. 55
3. 53
4. 44
5. 49

Q:5 Four years ago, the average age of A and B was 18 years. At present, the average of A, B, and C is 24 years. What would be the age of C after 8 years?
1. 44
2. 36
3. 28
4. 24
5. Cannot be determined

Q:6 There are three groups A, B, and C in a class and the number of students in these groups is in the ratio 4 : 3 : 5. If the average age of these groups is 12, 14, and 15 years respectively then find the average age of the class.
1. 13.75 years
2. 15.5 years
3. 12.25 years
4. 16 years
5. 12 years

Q:7 The average marks of a student in 10 papers are 80. If the highest and the lowest scores are not considered then the average marks becomes 81. If the highest score is 32 more than the lowest score, then what is the lowest score.
1. 55
2. 65
3. 70
4. 50
5. 60

Q:8 In a class there were 12 students. Two students left the class and 4 new students joined. If the average age decreased by 4 years and the total age decreased by 2 years, then find the new average age of the class.
1. 22 years
2. 23 years
3. 27 years
4. 25 years
5. None of these

Q:9 The average of twelve consecutive odd integers is 30. What is the sum of the digits of 1st and the last number of these 12 consecutive numbers?

1. 15
2. 17
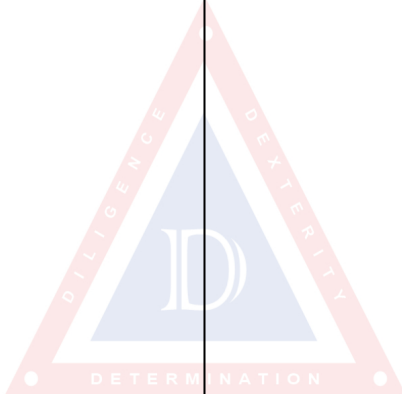**3.** 9
4. 11
5. 13

Q:10 After replacing an old member by a new member, it was found that the average age of five members of a club is the same as it was 3 years ago. What is the difference between the ages of the replaced and the new member?
1. 25 years
2. 20 years
3. 16 years
4. 15 years
5. data inadequate

Answer Key

1. (4)	2. (1)	3. (1)	4. (4)	5. (2)
6. (1)	7. (5)	8. (2)	9. (1)	10. (4)

Answers and Solutions

Q:1 The correct answer is **option 4** i.e. **21.75 years**

Sum of ages class of 23 students = 21 × 23 = 483 years

Sum of ages of class when age of teacher and principal is also added = (21 + 2) × (23 + 2) = 23 × 25 = 575 years

Sum of ages of principle and teacher = 575 − 483 = 92 years

Since, principle is 14 years older to teacher, then age of teacher = (92 − 14)/2 = 39 years

Average age of the class when only the age of teacher is added = (483 + 39)/24 = 522/24 = 21.75 years

Q:2 The correct answer is **option 1** i.e **22 years.**

Sum of the ages of 36 students = 36 × 28 = 1008 years

Sum of the ages of 24 students = 24 × 31 = 744 years

Sum of the ages of remaining 12 students = 1008 − 744 = 264 years

So the average age of 12 students = 264/12 = 22 years

Q:3 The correct answer is **Option 1** i.e. **45 and 15.**

If $X_1, X_2, ... X_n$ marks obtained by n students, then the average mark obtained avg mark = $(X_1 + X_2 + ... + X_n)/n$

Total mark = $X_1 + X_2 + ... X_n$ = avg × n

Total number of students in class = 60

Average marks of the students = 43

Total mark = 43 × 60 = 2580

The average score of the passed students = 52

If p students passed in the exam, then the total mark of passed students = 52 × p

The average score of the failed students = 16

If q students passed in the exam, then the total mark of passed students = 16 × q

As per the question,
⇒ p + q = 60 ....(1) and,
⇒ 52 × p + 16 × q = 2580 ....(2)
Therefore, solving the above equations (1) and (2)
p = 45 and q = 15

Q:4 The correct answer is **Option 4** i.e. **44**

Average consumption = Total Consumption/Total students

So, Total consumption of water for 'x' students = 4.5x

When 11 more students joined the school.

Average consumption of water per student is decreased by 20%

So, Total consumption of water for 'x + 11' students = (80% of 4.5) × (x + 11) = 3.6 × (x + 11) = (3.6x + 39.6)

Since total consumption remained same.

So, (3.6x + 39.6) = 4.5x
⇒ 0.9x = 39.6
⇒ x = **44**

Q:5 The correct answer is **option 2** i.e. **36**

Average of $X_1, X_2, ... X_n$ is given by,

Avg = $(X_1 + X_2 + ... + X_n)/n$
⇒ total value = $X_1 + X_2 + ... X_n$ = avg × n

Present Age of A = a

Present Age of B = b

Present Age of C = c

Four years ago, the average age of A and B was 18 years.

i.e. (a − 4 + b − 4) = 18 × 2 ⇒ a + b = 44

At present, the average of A, B, and C is 24 years.

i.e. (a + b + c) = 3 × 24 = 72
⇒ c = 72 − 44 = 28

Therefore the age of C after 8 years = 28 + 8 = 36

Q:6 The correct answer is **option 1** i.e. **13.75 years.**

Given,

The average age of group A = 12

The average age of group B = 14

The average age of group C = 15

Let the number of students be 4x, 3x, and 5x.

So, Total age of all groups = $(4x × 12) + (3x × 14) + (5x × 15)$

$= 48x + 42x + 75x = 165x$

Now, Average age of class = $165x/(4x + 3x + 5x) = 165x/12x = 55/4 = 13.75$

Hence, the average age of the class is 13.75 years.

Q:7 The correct answer is **Option 5** i.e. **60.**

The average marks of a student in 10 papers are 80

So,

Total marks = $(80 × 10) = 800$

If the highest and the lowest scores are not considered then the average mark becomes 81

So,

Total marks excluding the highest and lowest scores = $81 × 8 = 648$

Suppose the highest and lowest scores are 'x' and 'y' respectively

So,

$\Rightarrow (x + y) = 800 - 648$

$\Rightarrow (x + y) = 152 \ldots\ldots\ldots (1)$

Given:

The highest score in 32 more than the lowest score

So,

$\Rightarrow (x - y) = 32 \ldots\ldots\ldots (2)$

Solve the equations.

x = 92 and y = 60

Hence, the lowest score = **60**

Q:8 The correct answer is **Option 2** i.e. **23 years**

Let initial average = x years

So, Total age = 12x years

Two students left the class and 4 new students joined.

So, Total students now = 12 − 2 + 4 = 14

New average = $(x - 4)$ years

So, Total age now = $14(x - 4)$

According to the question:

$\Rightarrow 12x - 14(x - 4) = 2$

$\Rightarrow 2x = 54$

$\Rightarrow x = 27$

Hence, New average = 27 − 4 = 23 years

Q:9 The correct answer is **Option 1** i.e. **15**

Let the first odd number be x

Then other 11 numbers in series will be:

$(x + 2) , (x + 4) , \ldots\ldots (x + 22)$

Sum of all numbers will be:

$12x + (2 + 4 + 6 + \ldots + 22) = 12x + (11 × 12) = 12x + 132$

Average of these 12 numbers = 30

Hence, sum = 30 × 12 = 360

So, 12x + 132 = 360

x = 228/12 = 19

So, first number = 19

12th number = 19 + 22 = 41

Sum of sum-of-digits of 1st and last number = 1 + 9 + 4 + 1 = 15

Q:10 The correct answer is **Option 4** i.e. **15 years**

Average = Sum of numbers/Total numbers

Age decreased = $(5 × 3) = 15$ years

So, the required difference = 15 years