Average

AverageDay-1

Basic Concept

✓ $\underline{Avg = \dfrac{Sum}{TN.}}$

✓ $\underline{Sum} = Avg \times TN.$

✓ $\underline{TN} = \dfrac{Sum}{Avg}$

Properties

The average of 41 consecutive odd numbers^2 is 49. What is the largest number?

TN = 41   avg = 49

(a) 89

(b) 91

$$\frac{20 \qquad \boxed{49} \qquad 20}{}$$?

(c) 93

(d) 95

(e) None of these

$\xi = (49) + (20 \times 2) = \boxed{89} = Largest$

$Smallest = (49) - (20 \times 2) = 9$

Consider the sequence of 5 consecutive integers. (If the average of first three is t.) The average of all five integers is:

A. t + 2
B. t + 1
C. t + 3
D. t
E. t +1

$t-1 \quad t \quad \boxed{t+1} \quad t+2 \quad t+3 \qquad Avg = t+1$

$5 \quad 6 \quad ⑦ \quad 8 \quad 9$

$\underset{t}{=} \quad \boxed{t+1}$

A sequence contains eleven terms, which are consecutive even integers. The average of the second and the seventh term is 15. Find the average of all the terms.

A. 15
B. 16
C. 17
D. 18
E. None of these

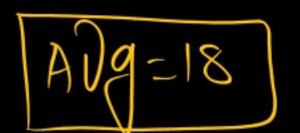$first = x$

$$
\begin{array}{ccccccccccc}
8 & 10 & 12 & 14 & 16 & 18 & 20 & 22 & 24 & 26 \\
(x) & (x+2) & (x+4) & (x+6) & (x+8) & (x+10) & (x+12) & (x+14) & (x+16) & (x+18)
\end{array}
$$

$(x+20)$ 28

$$\frac{(x+2) + (x+12)}{2} = 15$$

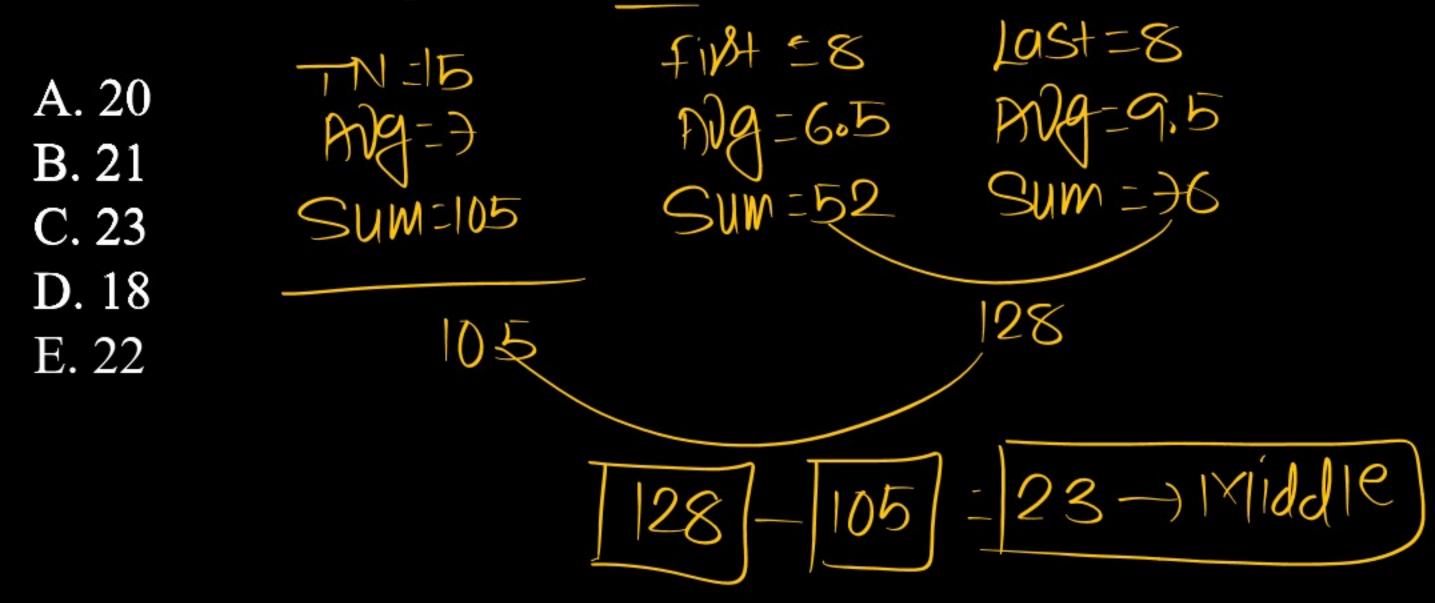| 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

15

$2x + 14 = 30$

$2x = 16$

$\boxed{x = 8}$

$\boxed{Avg = 18}$

Average of a set of five consecutive even numbers is 48. Average of another set of five consecutive odd numbers is 49. Find the product of smallest even number of the first set and largest odd number of the second set.

A. 3223
B. 2323
C. 3232
D. 2332
E. None of these

Set 1 (Even) 44 46 48 50 52

Set-2 (odd) 45 47 49 51 53

$\Rightarrow$ Smallest Even $\times$ Largest odd

$44 \times 53 = \boxed{2332}$

The average of 15 numbers is 7. If the average of the first 8 numbers be 6.5 and the average of last 8 numbers be 9.5, then the middle number is
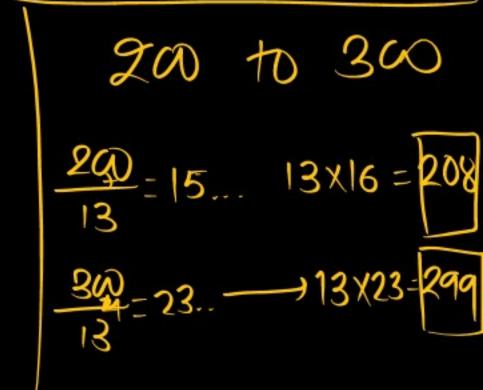
A. 20
B. 21
C. 23
D. 18
E. 22

$TN = 15$
$Avg = 7$
$Sum = 105$

$first = 8$
$Avg = 6.5$
$Sum = 52$

$Last = 8$
$Avg = 9.5$
$Sum = 76$

105

128

$$\boxed{128} - \boxed{105} = \boxed{23 \rightarrow Middle}$$

What is the average of all numbers between 100 and 200 which are divisible by 13?

(a) 147.5
(b) 145.5
(c) 143.5
(d) 149.5
(e) None of these

Diff = 13 = constant

$$\frac{104 + 195}{2} = \frac{299}{2} = \boxed{149.5}$$

$\frac{100}{13} = ? \ldots \longrightarrow 13 \times 8 = 104 = $ first

$\frac{200}{13} = 15. \longrightarrow 13 \times 15 = 195 = $ last

200 to 300

$\frac{200}{13} = 15\ldots \quad 13 \times 16 = \boxed{208}$

$\frac{300}{13} = 23.. \longrightarrow 13 \times 23 = \boxed{299}$

The total sales of 60 outlets of a shopping complex is Rs. 38000. The average sales of 20 of them is Rs. 400. The average sales of another 10 of them is Rs. 900. Find the average sale of the remaining outlets (in rupees).

(a) 600
(b) 700
(c) 650
(d) 750
(e) None of these

Total = 60 —————— 20 —————— 10 —————— 30

Avg —————— 400 —— 900 —————— Avg = 700

Sum = 38000 —— 8000 —— 9000 —————— 21000

38000 − 17000

Out of three numbers, the first is twice the second and is half of the third. If the average of the three numbers is 56, then difference of the first and third number is

a) 40
b) 42
c) 48
d) 50
e) 44

$\text{First} = 2x$ ... $\times 2$ ... $\div 2$

$\text{Second} = 1x$

$\text{Third} = 4x$

$\dfrac{2x + 1x + 4x}{3} = 56$

$7x = 168$

$\boxed{x = 24}$

$\text{First} - \text{Third} =$

$2x - 4x = 2x = \boxed{48}$

SAARTHI EDUCATION
Driven to Succeed..

Ronny in his football career, scored 12 goals on an average in 10 matches. If he scored 11 goals on an average in first 4 matches and 13 goals on an average in the last 4 matches, then find the average of the goals scored by him in the remaining 2 matches.
A. 11 goals
B. 12 goals
C. 13 goals
D. 10 goals
E. 9 goals

In an exam, the average marks obtained by John in English, Math, Hindi and Drawing were 50. His average mark in Math's, Science, Social Studies and Craft were 70. If the average mark in all seven subjects is 58, his score in Math's was
(a) 50
(b) 52
(c) 60
(d) 74
(e) None of these

The average score of Rajeev, Mahendra and Suresh is 63. Rajeev's score is 15 less than that of Sunny and 10 more than that of Mahendra. If Sunny scored 30 marks more than the average score of Rajeev, Mahendra and Suresh, what is the sum of Mahendra's and Suresh's score?

(a) 36
(b) 26
(c) 24
(d) 25
(e) None of these