MEGA REVISION SERIES

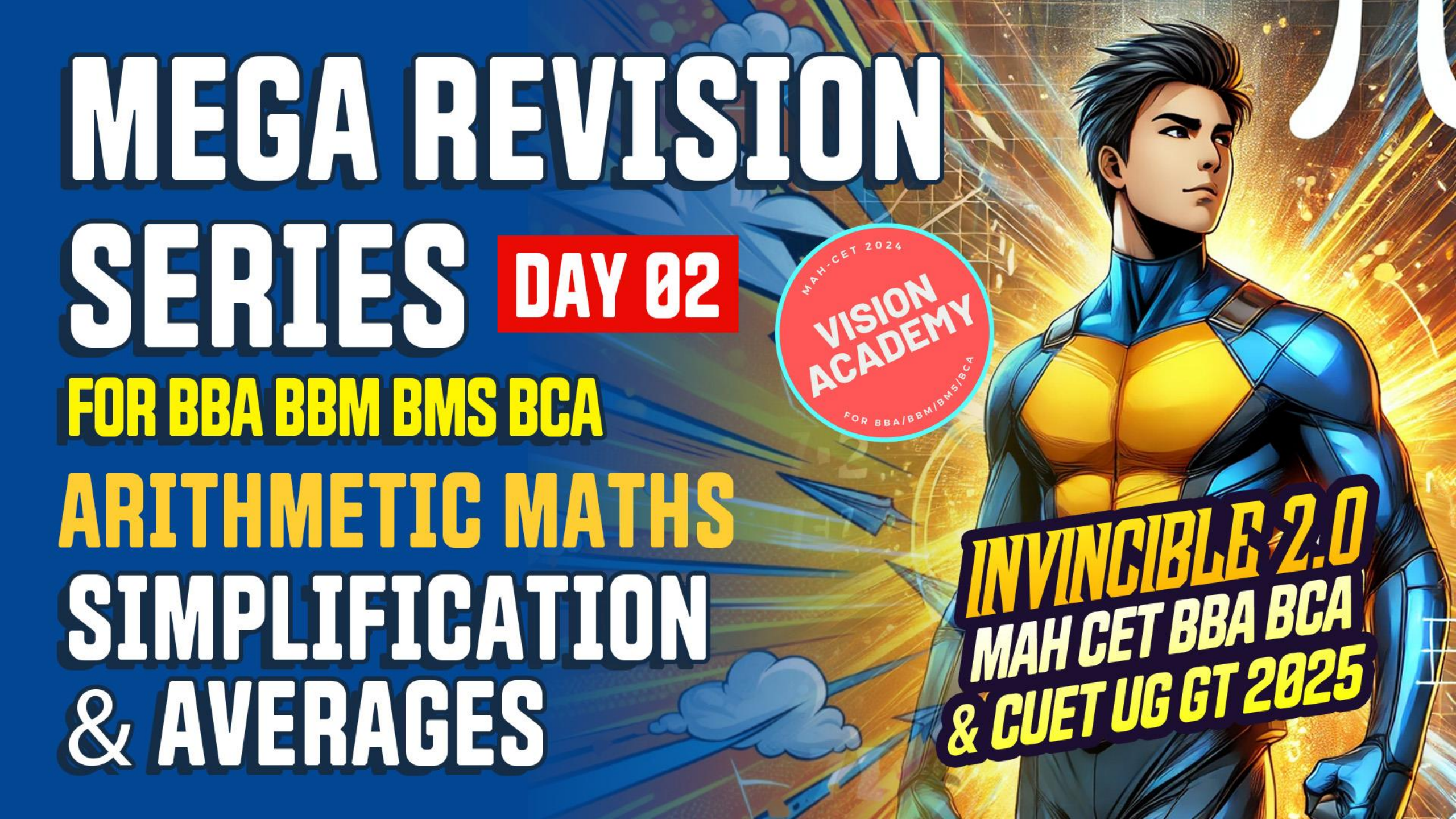
DAY 02

FOR BBA BBM BMS BCA

ARITHMETIC MATHS

SIMPLIFICATION & AVERAGES

MAH-CET 2024 VISION ACADEMY FOR BBA/BBM/BMS/BCA



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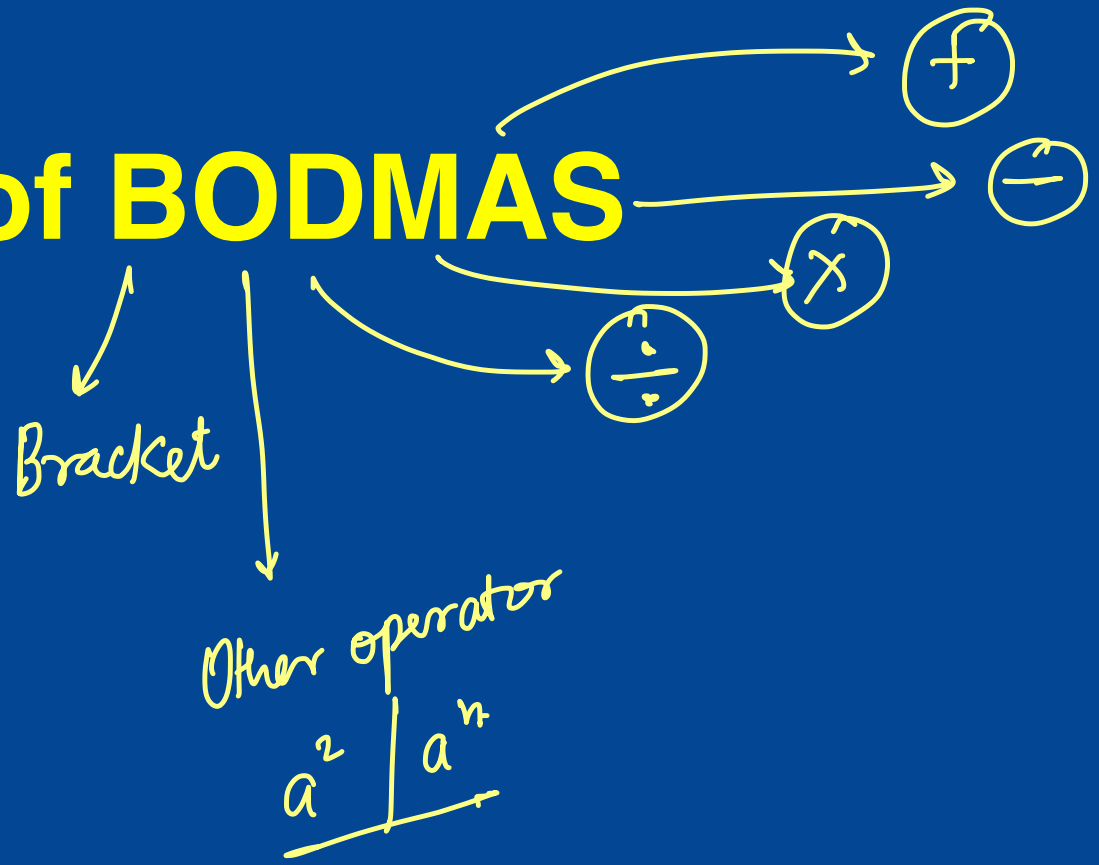
Concept of BODMAS



x

$9501 - ? = 3697$

(A) 13198 (B) 5814 (C) 5804 (D) 4894

x

$9501 - 3697 = x$

$$\begin{array}{r} 3697 \\ \hline 5804 \end{array}$$

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1014 × 986 = ?

(A) 998904 (B) 999804 (C) 998814 (D) 998804

```
   1014
 x  986
------
   6084
  8112x
 9126xx
------
 999804
```

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5186 + 87 – 3497 =?

A. 1776

B. 1689

C. 1766

D. 1786

5273
3497
1776

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$\underline{4326 \times 25} + 25 = ?$

A. 216300

B. 108150

C. 108175

D. 2163

108150

+25

108175

$0{\cdot}5 \times 0{\cdot}5 + 0{\cdot}5 \div 5 = ?$

(A) 0·15 (B) 0·25 (C) 0·35 (D) 0·45

$\frac{0{\cdot}5}{5} = 0{\cdot}1$

$0{\cdot}25 \times 0{\cdot}1 = 0{\cdot}35$

$8 \div 4[(3-2) \times 4 + 3 - 7 = ?$

(A) – 3 (B) – 4 (C) 4 (D) 5

Bracket :-

$8 \div 4 \times 1 \times 4 + 3 - 7$

$2 \times 1 \times 4$

$8 + 3$ $\quad 11 - 7 = \boxed{4}$

MAH-CET 2024 VISION ACADEMY FOR BBA/BBM/BMS/BCA

$$1 + 1 \div \left\{ 1 + 1 \div \left(1 + \frac{1}{3} \right) \right\} = ?$$

(A) $1\frac{1}{3}$ (B) $1\frac{4}{7}$

(C) $1\frac{1}{8}$ (D) $1\frac{2}{3}$

4/3

$\frac{a}{b} \div \frac{c}{d}$

$= \frac{a}{b} \times \frac{d}{c}$

$1 + 1 \div \left\{ 1 + 1 \div \frac{4}{3} \right\}$

$1 + 1 \div \left\{ 1 + \frac{3}{4} \right\}$

$1 + 1 \div \frac{7}{4}$

$1 + \frac{4}{7} = \frac{11}{7} = 1\frac{4}{7}$

$$15\frac{2}{3} \times 3\frac{1}{6} + 6\frac{1}{3} = 11\frac{7}{18} + ?$$

(A) $39\frac{5}{9}$

(B) $137\frac{4}{9}$

(C) $29\frac{7}{9}$

(D) None of these ✗

$$\frac{47}{3} \times \frac{19}{6} + \frac{19}{3} = \frac{205}{18} + x$$

$$\frac{893}{18} - \frac{205}{18} + \frac{19 \times 6}{3 \times 6} = x$$

$$x = \frac{802}{18} = \frac{401}{9}$$

$$= 44\frac{5}{9}$$

$$x = \frac{893 - 205 + 114}{18}$$

$$x = \frac{1007 - 205}{18}$$

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$5005 - 5000 \div 10{\cdot}00 = ?$

(A) 0·5 (B) 50 (C) 5000 (D) 4505

$5005 - \frac{5000}{10}$

$= 4505$

$$\frac{\frac{1}{2} \div 4 + 20}{\frac{1}{2} \times 4 + 20} = ?$$

(A) $\frac{81}{88}$ (B) $2\frac{3}{11}$

(C) $\frac{161}{176}$ (D) 1

$$\frac{\frac{1}{2} \times \frac{1}{4} + 20}{22}$$

$$= \frac{\frac{1}{8} + 20}{22}$$

$$= \frac{161}{8 \times 22} = \frac{161}{176}$$

When Simplified, the product $\left(2-\frac{1}{3}\right)\left(2-\frac{3}{5}\right)\left(2-\frac{5}{7}\right)\ \ldots$ $\left(2-\frac{999}{1001}\right)$ is equal to—

(A) $\frac{991}{1001}$

(B) $\frac{1001}{13}$

(C) $\frac{1003}{3}$

(D) None of these

$\frac{5}{3} \times \frac{7}{5} \times \frac{9}{7} \cdots \cdots \frac{1003}{1001}$

$\frac{1003}{3}$

Exam:
28 April
29 April
02 May

MAH-CET 2024 VISION ACADEMY FOR BBA/BBM/BMS/BCA

$$\frac{\frac{1}{4}+\frac{1}{4}\div\frac{5}{4}}{\frac{1}{4}\times\frac{1}{4}+2\frac{1}{4}}=?$$

(A) $\frac{16}{25}$

(B) $\frac{32}{185}$

(C) $\frac{36}{185}$

(D) None of these

$\frac{1}{4}\times\frac{4}{5}$

$$\frac{\frac{1}{4}+\frac{1}{5}}{\frac{1}{16}+\frac{9\times4}{4\times4}}=\frac{\frac{9}{20}}{\frac{37}{16}}$$

$$=\frac{9}{20}\times\frac{16}{37}$$

$$\frac{36}{185}$$

$\frac{\left(\frac{a}{b}\right)}{\left(\frac{c}{d}\right)}=\frac{a}{b}\times\frac{d}{c}$

Concept of Averages

observations

Punjab X ⟶ 4, 6, 2, 1, 0, 1

Avg run per ball ⟶ $\frac{4+6+2+1+0+1}{6}$

$= \frac{14}{6} = \frac{7}{3} = 2.33.$

Concept of Averages

$$\text{Average} = \frac{\text{Total of all observations}}{\text{No. of Observations}}$$

The average of 8 number is 21. If each of the numbers is multiplied by 8, the average of the new set of numbers is :

(A) 8 (B) 21 (C) 29 (D) 168

$$\frac{8[\text{Total}]}{8} = 21$$

$8 \times 21 = 168$

CONCEPT

$$\frac{x+y+z}{3} = \text{Mean}$$

$$\frac{3x + 3y + 3z}{3} =$$

$$\frac{3(x+y+z)}{3} = 3M$$

The average height of 30 girls out of a class of 40 is 160 cms and that of the remaining girls is 156 cms. The average height of the whole class is :

(A) 158 cms (B) 158·5 cms (C) 159 cms (D) 159·5 cms

Total = 40

$\frac{T_{30}}{30} = 160$ $\quad\quad$ $\frac{T_{10}}{10} = 156$

$T_{30} = 160 \times 30$ $\quad\quad$ $T_{10} = 156 \times 10$

4800 $\quad\quad$ 1560

$\frac{T_{40}}{40} = \frac{4800 + 1560}{40} = \frac{6360}{40} = 159$

The average of three numbers is 42. The first is twice the second and the second is twice the third. The difference between the largest and the smallest number is :

(A) 18 (B) 36 (C) 54 (D) 72

$x = 2y$

$y = 2c$

$\frac{4x + 2x + x}{3} = 42$

$\frac{4x \quad 2x \quad x}{x \quad y \quad 3}$

$x = \frac{42 \times 3}{7} = 18$

$4x = 72$

$72 - 18 = 54$

The average weight of A, B, C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight of B is :

(A) 17 kg (B) 20 kg (C) 26 kg (D) 31 kg

$$\frac{A+B+C}{3} = 45$$

$$A+B+C = 135$$

$$A+B = 40 \times 2 = 80$$

$$B+C = 43 \times 2 = 86$$

$$A+B+B+C = 80+86 = 166$$

$$135 + B = 166$$

$$B = 166 - 135$$

The average of first nine multiples of 3 is :

(A) 12·0 (B) 12·5 (C) 15·0 (D) 18·5

3 . . 6 9 12 . . . . . 27 → t_9

↓ ↓ ↓

t_1 t_2 t_3

$d = t_2 - t_1 = 3$

$S_n = \frac{n}{2}[t_1 + t_n]$

$= \frac{9}{2}[3 + 27]$

15

$S_n = \frac{9}{2} \times 30 = 135$

$Avg = \frac{135}{9} = 15$

The average of odd numbers upto 100 is :

(A) 51 (B) 50 (C) 49·5 (D) 49

$$S_n = \frac{50}{2}[1+99]$$

$$= \frac{50}{2} \times 100$$

$$= 2500$$

1, 3, 5 ---- 99

t_1 ↓ t_n ↓ t_{50}

$$Avg = \frac{2500}{50}$$

50

Exam

29 April

30

02 May

The average of 30 results is 20 and the average of other 20 results is 30. What is the average of all the results ?

(A) 24 (B) 25 (C) 48 (D) 50

$$\frac{T_{30}}{30} = 20$$

$$T_{30} = 600$$

$$\frac{T_{20}}{20} = 30$$

$$T_{20} = 600$$

$$T_{50} = T_{30} + T_{20} = \frac{600 + 600}{50}$$

$$= \frac{1200}{50} = 24$$

The average age of 24 students in a class is 10. If the teacher's age is included, the average increases by one. The age of the teacher is :

(A) 25 years (B) 30 years (C) 35 years (D) 40 years

$$\frac{T_{24}}{24} = 10$$

$$\therefore$$

Teacher = x

$$\frac{T_{24} + x}{25} = 11$$

$$240 + x = 11 \times 25$$

$$240 + x = 275$$

$$x = 270 - 240$$

$$= 35$$

The average expenditure of a man for the first five months is Rs. 120 and for the next seven months it is Rs. 130. If he saves Rs. 290 in that year, his monthly average income is :

(A) Rs. 140 (B) Rs. 150 (C) Rs. 160 (D) Rs. 170

$\frac{M_5}{5} = 120 \quad M_5 = 600 \qquad \frac{M_7}{7} = 130$

$M_7 = 910$

$\frac{600+910}{12} + \frac{290}{12} = \text{Income}$

$\text{Income} = \frac{600+910+290}{12} = \frac{1800}{12}$

$= 150$

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