Averages

Q. Average salary of total employee 8000₹, The average salary of 7 technicians is ₹ 12000 and the average salary of rest is ₹ 6000 total no. of employees?

→

$$8000 \times x = 12000 \times 7 + 6000 \times (x-7)$$

$$\boxed{x = 26}$$

Q. If avg of 10 papers is 80 marks, If lowest and hieghest is neglected it is 81 marks if highest is 92 what is lowest?

→

- total marks = $80 \times 10 = 800$
- total marks without highest and lowest = $81 \times 8 = 648$
- Highest + lowest = $800 - 648$

$$\therefore \boxed{\text{lowest} = 60}$$

Q. Avg of class X, Y and Z are 83, 76 and 85, The avg of X and Y is 79 and avg of Y and Z is 81 what is avg of XYZ together?

→

$X = 83A$, $Y = 76B$, $Z = 85C$

$$\frac{XA + YB}{A+B} = 79 \quad \therefore \quad 4A = 3B$$

$$\frac{YB + ZC}{B+C} = 81 \quad \therefore \quad 4C = 5B$$

$$\therefore (\text{Avg } XYZ) = \frac{XA + YB + ZC}{A+B+C} = 81.2$$

Q. Avg of 17 no. is 10.9, If the avg of first nine no. is 10.5 and last nine is 11.4 middle no is -

→

$(10.5 \times 9) + (11.4 \times 9) = 197.2$

middle no. is $= 197.2 - (17 \times 10.9)$

$\boxed{\text{middle no. is} = 11.8}$

Q. Avg of 12 innings, In the 13th innings he score 96 runs and therefore increase average by 5 runs what is avg. of 13 innings?

→ To increase avg by 5 runs we have to add 5 runs to all 12 innings and remaining of 96 runs is the avg element 13th.

$5 \times 12 = 60$

$96 - 60 = 36$

∴ Average of 13th innings is 36 runs

Q. In 17th inning batsman scores 85 runs increase average by 3 runs what is average after 17th inning?

→ to increase avg by 3 runs we required to increase runs of every inning of last 16 inning by 3 hence we need $16 \times 3 = 48$ run

Avg after 17th inning $= 85 - 48 = 37$ runs.

Q. Avg weight of 8 sailors increase by 1 kg if per weighing 56 kg replaced with new sailor wha is weight of new sailor?

→ To increase weight avg of by 1 kg 8 kg need to add hence replaced sailor (56+8) kg

Q. Avg. age of P, Q, R and S five years ago 45, and pr Avg age of P, Q, R, S and T is 49 present age of

→ present age of P, Q, R, S (avg) $= 4 \times 45 + 4 \times 5 = 200$

= Present age of P, Q, R, S & T (avg) $= 49 \times 5 = 245$

Present age of T = 45 years

Q. The avg of 8 people is increased by 2 years when two of them of 24 years and 20 years replaced by two women what is age of two womens?

→ To increase avg by 2 years ⇒ 8×2 = 16 years required by replace of two of 24 & 20 years we need to compansate this 16 years hence

∴ **Age of womens = 30 years**

Q. marks of 120 boys avg is 35. If avg of passed boys are 39 and avg of failed is 15 how many peopl passed?

→ Let passed and failed no. of students x and y then

$$\frac{39x + 15y}{x+y} = 35$$

$$x + y = 120$$

$$\boxed{x = 100}$$

Q. Avg temp of Tue to Fri is 48°C, Wed to Sat is 52°C if temp. of Tue is 42°C Temp on Saturday?

→

Tue + Wed + Thur + Fri = 48×4 = 192°C

Wed + Thur + Fri = 192° − 42°C = 150°C

for avg of 52°C temp on Sat should be 58°C

Q. Avg of 50 no. is 28 if 35 & 25 are discarded from them Avg of remaining no.

→ 50 × 28 = 1400

1400 − 60 = 1340

$$\text{Avg} = \frac{1340}{48} = 27.92$$

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Q. Youngest and oldest people have 100 years age dif excluding them 40 people have Avg age 28 yea while including them 42 people have Avg 30 what age of oldest?

→ Let age of yougest N then oldest is (N+100)

$\therefore$ $N+(N+100)+40\times28 = 42\times30$

$N = 20$

$\therefore$ oldest is 120 years

Q. In group of 5 people if old one is replaced by new Avg age is same as it was before 3 years what is the difference of avg betn new and old?

→ If Avg of 5 people reduced to as it was 3 yea back that means avg decreased by 3 hence to reduced avg of 5 people by 3 a person shou replace with $(3\times5=15)$ year less person.

$\therefore$ difference of old and new is 15 years

Q. Avg of batsman in 46 innings is 60 runs, difference of biest and lowest is 150 runs excluding this two inning avg is 58 runs find ~~avg~~ highest run?

→ Let lowest score = n

then highest score = n+150

$n+(n+150)+44\times58 = 46\times60$

$n = 29$

highest score = 179

Q. Vijay says his weight betn 75 kg to 85 kg and his sister say his weight is 70 to 80 but mother says his weight cannot be greater than 78 kg What is weight on an Average if all of them are correct?

→ weights satisfying all the conditions are - 76 and 77 kg.

Avg of 76 and 77 kg. = 76.5 kg

Q. Man's present age is 125% of age 10 years ago and 83.33% of his age 10 years from now

→ Let present age is x. then from both conditio

$$(x-10)\,1.25 = 0.8333\,(x+10)$$

$$\boxed{x = 50}$$

Q. Avg of 3rd and 4th number in 5 consecutive no. is 10. What is the sum of these 5 numbers?

→ $N, N+1, N+2, N+3, N+4$

$$\frac{(N+2)+(N+3)}{2} = 10$$

$$N = \frac{15}{2}$$

$$\text{Sum} = N + (N+1) + (N+2) + (N+3) + (N+4)$$
$$= 5N + 10$$

Sum = 47.5

Q. Avg of first four day temperature is 38° and Last four days temperature is 38° out of ~~Last~~ total 5 days. Ratio of ~~4:5~~ 1st & 5th day is 4:5 what is temp of fifth day?

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