MEGA REVISION SERIES

DAY 26

FOR BBA BBM BMS BCA

MATHS

Basics Arithmetic

COMPLETE REVISION

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

INVINCIBLE 2.0

MAH CET BBA BCA

& CUET UG GT 2025

What is the value of 48÷12×(4÷2)?

(A) 1

(B) 8

(C) 2

(D) 16

$\downarrow$

2

$\div \times + -$

BODMAS

of (x)

Bracket

4

$\frac{48}{12} \times 2$

Simplification

Average

R & P

Profit / Loss

Sets

Probability

Simplify: ~~541+381-141-141~~ $\frac{21}{4} + \frac{25}{8} \div \frac{5}{4} - \frac{5}{4}$

(A) ~~641~~

(B) ~~521~~

(C) ~~741~~

(D) ~~621~~

$5\frac{1}{4} + 3\frac{1}{8} \div 1\frac{1}{4} - 1\frac{1}{4}$

(a) $6\frac{1}{4}$ (b) $5\frac{1}{2}$ (c) $7\frac{1}{4}$ (d) $6\frac{1}{2}$ ✓

$6\frac{1}{2}$

$\frac{\overset{5}{\cancel{25}}}{\cancel{8}_2} \times \frac{\cancel{4}}{\cancel{8}}$

$\frac{21}{4} + \frac{5^{\times 2}}{2^{\times 2}} - \frac{5}{4} = \frac{21+10-5}{4}$

$= \frac{26}{4} = \frac{13}{2}$

What is the value of $100\times2-[300-\{200-(100-50)\}]$?

(A) 50

(B) 100

(C) 150

(D) 200

$200-50$

$300-150$

$100\times2-150$

$200-150$

$=50$

What is the value of 50% of 80+25% of 120?

(A) 60

(B) 70

(C) 80

(D) 90

$$\frac{50}{100} \times 80 + \frac{25}{100} \times 120$$

$$= 40 + 30 = 70$$

Simplify: [illegible]

(A) 3/4

(B) 1/2

(C) 1

(D) 5/4

$= \frac{3}{4} + \frac{1}{2} - \frac{1}{2} \times \frac{2}{1}$

What is the smallest prime number?

(A) 0

(B) 1 → neither prime nor composite

(C) 2 → even prime no. / smallest prime.

(D) 3 → smallest odd prime no.

What is 40% of 200?

(A) 40

(B) 60

(C) 80

(D) 100

$$\frac{40}{100} \times 200$$

A score of 60 out of 80 is what percentage?

(A) 60%

(B) 70%

(C) 75%

(D) 80%

$$\frac{60}{80} \times 100 = 75\%$$

A number decreased by 20% becomes 160. What is the original number?

(A) 180

(B) 192

(C) 200

(D) 210

$$x - 20\%\text{ of } x = 160$$

$$x - \frac{20}{100} \times x = 160$$

$$x - \frac{20x}{100} = 160$$

$$\frac{100x - 20x}{100} = 160$$

$$\frac{80x}{100} = 160$$

$$x = 200$$

If x is 80% of y, what percentage is y of x?

(A) 100%

(B) 110%

(C) 120%

(D) 125%

$$x = \frac{80}{100} y$$

$$y = \frac{100}{80} x = \frac{5}{4} x$$

$$\frac{5}{4} \times \frac{25}{100} = 125\%$$

Find the average of the numbers: 10, 15, 20, 25, 30.

(A) 15

(B) 20

(C) 25

(D) 18

$$\text{Avg} = \frac{\text{sum of numbers}}{\text{total no. of numbers.}}$$

$$= \frac{100}{5} = 20$$

The average weight of 10 students is 55 kg. If a student weighing 65 kg leaves the group, what is the average weight of the remaining 9 students?

(A) 54 kg

(B) 54.5 kg

(C) 53.89 kg

(D) 55 kg

$$\text{Avg (10 student)} = \frac{\text{total of 10}}{10} = 55$$

$$\text{total of 10} = 550 - 65$$

$$= 485$$

$$\text{Avg of 9} = \frac{485}{9} = 53$$

The average marks of 30 students in Section A is 60, and the average marks of 20 students in Section B is 70. What is the average marks of all students in both sections?

(A) 64

(B) 65

(C) 66

(D) 68

$$\text{Avg of A} = \frac{\text{total}}{30} = 60 \qquad T(A) = 60 \times 30 = 1800$$

$$T(B) = 1400$$

$$\text{Total} = \frac{T(A) + T(B)}{30 + 20} = \frac{1800 + 1400}{50}$$

$$= \frac{3200}{50} = 64$$

The average of 11 results is 50. If the average of the first 6 results is 49 and that of the last 6 results is 52, find the sixth result.

(A) 50

(B) 52

(C) 56

(D) 60

Total $= 11 \times 50 = 550$

1 2 3 4 5 6 → 8 9 10 11

Total of first 6 $= 6 \times 49 = 294$

Total of last 6 $= 6 \times 52 = 312$

6th value $= 294 + 312 - 550$

$= 606 - 550 = 56$

If A:B=3:4 and B:C=8:9, find A:C.

(A) 1:2

(B) 2:3

(C) 3:2

(D) 1:3

$A:B = 3:4 = 6:8$

$B:C = 8:9$

$A:B:C = 6:8:9$

$A:C = 6:9$

$= 2:3$

Two numbers are in the ratio 4:5. If their sum is 81, find the numbers.

(A) 36, 45

(B) 40, 41

(C) 32, 49

(D) 28, 53

$\frac{x}{y} = \frac{4}{5} \Rightarrow 5x = 4y$

$5x - 4y = 0 \quad -(1)$

$\Rightarrow x + y = 81$

$4x + 4y = 324$

$5x - 4y = 0$

$9x = 324$

$x = \frac{324}{9} = 36$

The ratio of the ages of Ram and Shyam is 5:7. If the sum of their ages is 48 years, what is Ram's age?

(A) 15 years
(B) 20 years
(C) 25 years
(D) 28 years

x y

$$\frac{x}{y} = \frac{5}{7} \Rightarrow 7x = 5y$$

$$7x - 5y = 0$$

$5x$ $\quad x + y = 48 \times 5$ $\quad + 5x + 5y = 240$

$$12x = 240$$

$$x = \frac{240}{12}$$

$$x = 20$$

ALAG SIGN = ADD

SAME SIGN = SUB

What is the mean proportional between 9 and 16?

(A) 12

(B) 12.5

(C) 13

(D) 14

9 c

$$b = \sqrt{9 \times 16}$$

$$= \sqrt{144}$$

$$= 12$$

a, b, c are in prop.

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

$$b^2 = ac$$

mean Prop:

$$\Rightarrow b = \sqrt{ac}$$

If a:b=1:2, b:c=3:4, find a:b:c.

(A) 1:2:4

(B) 3:6:8

(C) 1:3:4

(D) 3:4:8

$\times 3 \quad \times 3$

$a : b = 1 : 2 = 3 : 6$

$b : c = 3 : 4 = 6 : 8$

$\times 2 : \times 2$

$a : b : c = 3 : 6 : 8$

An item is sold for Rs. 450 at a loss of 10%. What is the cost price?

(A) Rs. 400

(B) Rs. 495

(C) Rs. 500

(D) Rs. 550

SP = 450

10% = loss

$\frac{90}{100} CP = 450$

$CP = \frac{450 \times 100}{90}$

$CP = 500$

NOTE:

Profit = SP − CP

Loss = CP − SP

$\text{Profit}\% = \frac{\text{Profit}}{CP} \times 100$

$\text{Loss}\% = \frac{\text{loss}}{CP} \times 100$

A shopkeeper marks his goods 20% above the cost price and allows a discount of 10% on the marked price. Find his profit percent.

(A) 8%

(B) 10%

(C) 12%

(D) 18%

100 = CP

MP = 120

Discount = 10%

SP = 120 − 12 = 108

= 8%

A man buys an item for Rs. 500 and sells it at a profit of 30%. What is the selling price?

(A) Rs. 530
(B) Rs. 600
(C) Rs. 650
(D) Rs. 700

CP = 500

Profit = 30%

30% of 500 = 150

SP = 500 + 150 = 650

1000

A man sells two articles for Rs. 500 each. On one, he gains 25% and on the other, he loses 25%. What is his overall gain or loss percent?

(A) 6.25% gain

(B) 6.25% loss

(C) No profit no loss

(D) 5% loss

1000

$SP = 500 \Rightarrow CP = 400$

$\text{Profit} = 100$

$SP = 500$

$SP = 500 \Rightarrow \frac{75x}{100} = 500$

$= 500 \times \frac{4}{100}$

$= \frac{2000}{3} = 666.$

44 \ 100

956 $\Rightarrow$ CP

The sum of three consecutive integers is 63. What is the middle integer?

(A) 20

(B) 21

(C) 22

(D) 23

$$x + x+1 + x+3 = 63$$

$$3x+3 = 63$$

$$3x = 63-3$$

$$3x = 60$$

$$x = 20$$

$$x+1 = 21$$

If one-fourth of a number exceeds its one-fifth by 5, find the number.

(A) 80

(B) 90

(C) 100

(D) 120

- Entrance is same
  - BBA
  - BCA
  - BMS
  - BBM
  - Intg. MBA/MCA

$$\frac{x}{4} - \frac{x}{5} = 5$$

$$\frac{5x - 4x}{20} = 5$$

$$\frac{x}{20} = 5$$

$$x = 5 \times 20 = 100$$

x y

A father is 30 years older than his son. In 12 years, the father will be three times as old as his son. Find their present ages.

(A) Father 36, Son 6

(B) Father 39, Son 9

(C) Father 42, Son 12

(D) Father 48, Son 18

$x = y + 30$

$x - y = 30$ ——— (1)

$(x+12) = 3(y+12)$

$x+12 = 3y+36$

$x - 3y = 24$

$x - y = 30$

$-x + 3y = 24$

$2y = 6$

$y = 3$ | $x = 33$

Two coins are tossed simultaneously. What is the probability of getting exactly one head?

(A) 1/4

(B) 1/3

(C) 1/2

(D) 3/4

$$S = \{HH, HT, TH, TT\}$$

$$n(S) = 4$$

$$P(A) = \frac{n(A)}{n(S)} = \frac{2}{4} = \frac{1}{2}$$

A bag contains 3 red balls and 5 blue balls. What is the probability of drawing a blue ball?

(A) 3/8

(B) 5/8

(C) 3/5

(D) 5/3

$n(S) = 8$

$\frac{5}{8}$

The probability of an event happening is 0.6. What is the probability of the event not happening?

(A) 0.4

(B) 0.6

(C) 1

(D) 0

$$0 \leq P(A) \leq 1$$

winning = x

lossing = $1-x$

Three coins are tossed. What is the probability of getting exactly two tails?

(A) 1/8

(B) 2/8

(C) 3/8

(D) 4/8

$S = \{HHH, HHT, HTH, THH, HTT, THT, TTH, TTT\}$

$n(S) = 8$

$\frac{3}{8}$

$U = 60$ ← A ↙ B

In a group of 60 people, 35 speak Hindi, 45 speak English and 20 speak both Hindi and English. How many people speak at least one of these two languages?

(A) 50

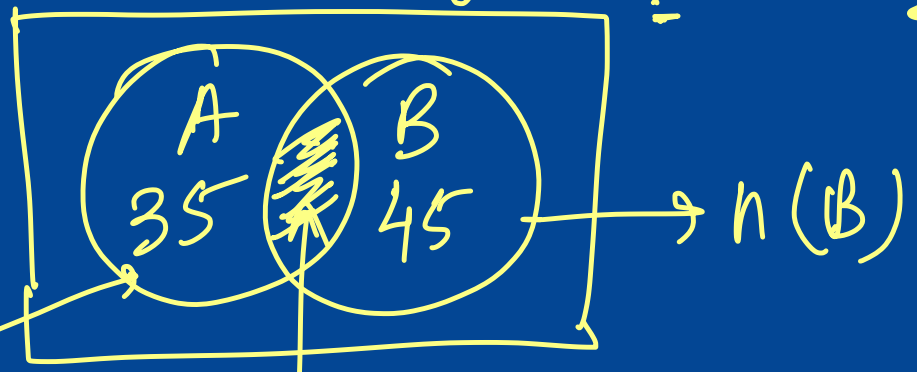
(B) 55

(C) 60

(D) 65

SETS

$U = 60$ ∴



Intersection
Union Rule for 2 sets

$n(A)$

$20 = n(A \cap B)$

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$= 35 + 45 - 20$$

$$= 80 - 20 = 60$$

In a survey, 70% of people like coffee and 40% like tea. If each person likes at least one of the two drinks and 50 people like both, find the total number of people surveyed.

(A) 100

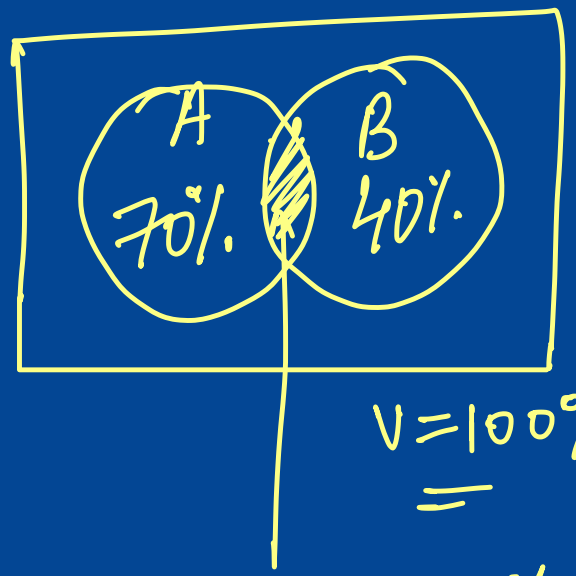
(B) 200

(C) 250

(D) 500

10% = 50

100% = 500



$n(A \cup B) = 100\% = ?$

$n(A \cap B) = ? = 10\% = 50$

$$n(A \cap B) = n(A) + n(B) - n(A \cup B)$$

$$= 70 + 40 - 100 = 110 - 100$$

$$= 10$$

If 18:x::x:8, find the value of x.

(A) 10

(B) 11

(C) 12

(D) 14

$$\frac{18}{x} = \frac{x}{8}$$

$$x^2 = 18 \times 8$$

$$x^2 = 144$$

$$x = 12$$

The age of A and B is in the ratio 1: 3. After 10 years, the ratio of their ages will become 1:2. Find the average of their ages after 20 years.

(a) 22 (b) 40

(c) 37 (d) 30

$$\frac{A}{B} = \frac{1}{3} \Rightarrow 3A = B$$

$B = 30$

$$\frac{A+B}{2} = \frac{80}{2} = 40$$

$$\frac{A+10}{B+10} = \frac{1}{2}$$

$B = 50$ after 20 yrs

$$2(A+10) = B+10$$

$A = 30$

$$2A+20 = 3A+10$$

$$20-10 = 3A-2A \Rightarrow A = 10$$

Avg + Arithmetic Progression

Find the average of the first 100 natural numbers.

(a) 50.50 (b) 52.50 (c) 51.50 (d) 49

$$\text{Avg} = \frac{\text{Sum of 100 nos}}{100}$$

$$= \frac{5050}{100} = 50.5$$

Take Note

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

(a = t_1, d = diff)

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

$t_1 = 1$

$t_{100} = 100$

$$S_{100} = \frac{100}{2}[1+100]$$

$$= 101 \times 50$$

$$= 5050$$

Find the average of all prime numbers between 20 and 50.

(a) 35.8 (b) 34.65 (c) 35.85 (d) 31.8

23, 29, 31, 37, 41, 43, 47

$$\frac{251}{7} = 35.85$$

60

4

The average score of a cricketer in three matches is 33 runs and in two other matches, it is 23 runs. Find the average in all the five matches.

(a) 31 (b) 26 (c) 29 (d) 28

$T_3 = 33 \times 3$

$T_3 = 99$

$T_2 = 23 \times 2$

$T_2 = 46$

$$\frac{99+46}{5} = \frac{145}{5}$$

$$= 29$$

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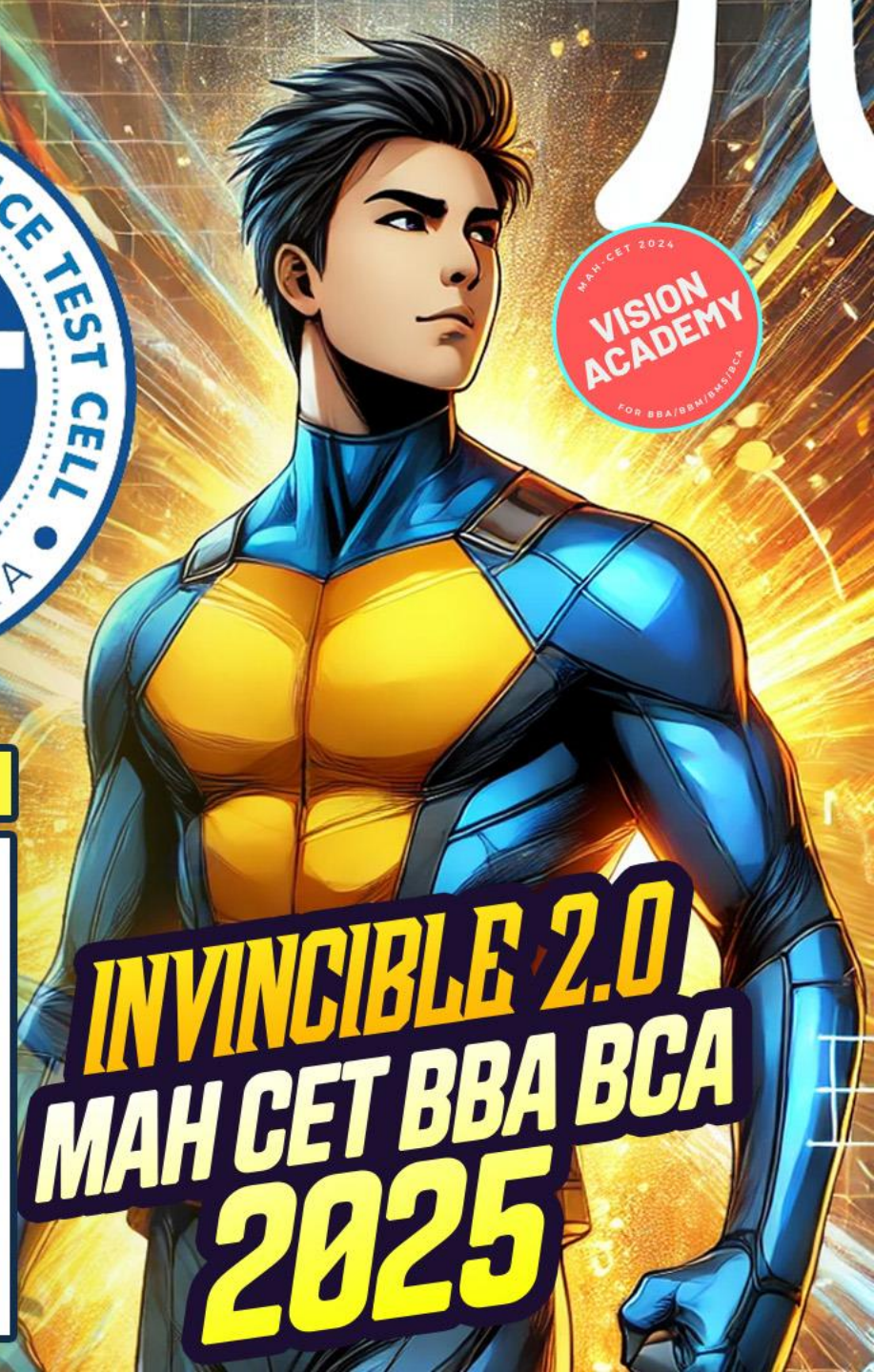

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