FOR CUET, XET, JHCCEE, SET, BUMAT, SVUET, etc.

MATHS QUANTS One Shot

(10 maths)

A number of three digits when divided by 2, 5, 9, 11 leaves remainder 1 in each case. The number is

(a) 981
(b) 983
(c) 991
(d) 997

LCM → 2, 5, 9, 11
↓
3×3

2 × 5 × 9 × 11 = 990 ⇒ LCM
+1
991

When a number is divided by 24, the remainder is 16. The remainder when the same number is divided by 12 is

A. 3

B. 4

C. 6

D. 8

Dividend = Divisor × Quotient + Remainder

$X = 24 \times Q_1 + 16$

$X = 12 \times 2Q_1 + R$

$16 = 12 \times 1 + 4$

Remainder

$\frac{72}{24} = 3$ ×2

$\frac{72}{12} = 6$ ×2

Evaluate $\sqrt{129+\sqrt{216+\sqrt{68+\sqrt{169}}}}$

A. 13

B. 15

C. 9

D. 12

$$\sqrt{169} = 13$$

$$\sqrt{68+13} = \sqrt{81} = 9$$

$$\sqrt{216+9} = \sqrt{225} = 15$$

$$\sqrt{129+15} = \sqrt{144} = 12$$

The simplified value of $\frac{112}{\sqrt{196}} \times \frac{\sqrt{576}}{12} \times \frac{\sqrt{256}}{8}$ is

A. 12

B. 8

C. 16

D. 32

Q. $\frac{\cancel{112}}{\cancel{14}} \times \frac{\cancel{24}^{2}}{\cancel{12}} \times \frac{\cancel{16}^{2}}{\cancel{8}}$

$= 8 \times 4 = 32$

The value of $\sqrt[6]{0.000729}$ is

A. 0.027

B. 0.3

C. 0.03

D. 0.09

$$\sqrt[6]{\frac{729}{1000000}} = \sqrt[6]{\frac{3^6}{10^6}}$$

$$= \frac{3}{10} = 0.3$$

1499 ×1499 = ?

A. 19501

B. 1900501

C. 2247001

D. 2204701

$1499^2 = [1500-1]^2$ $(a-b)^2 = a^2 - 2ab + b^2$

$= 2250000 - 3000 + 1$

$=$

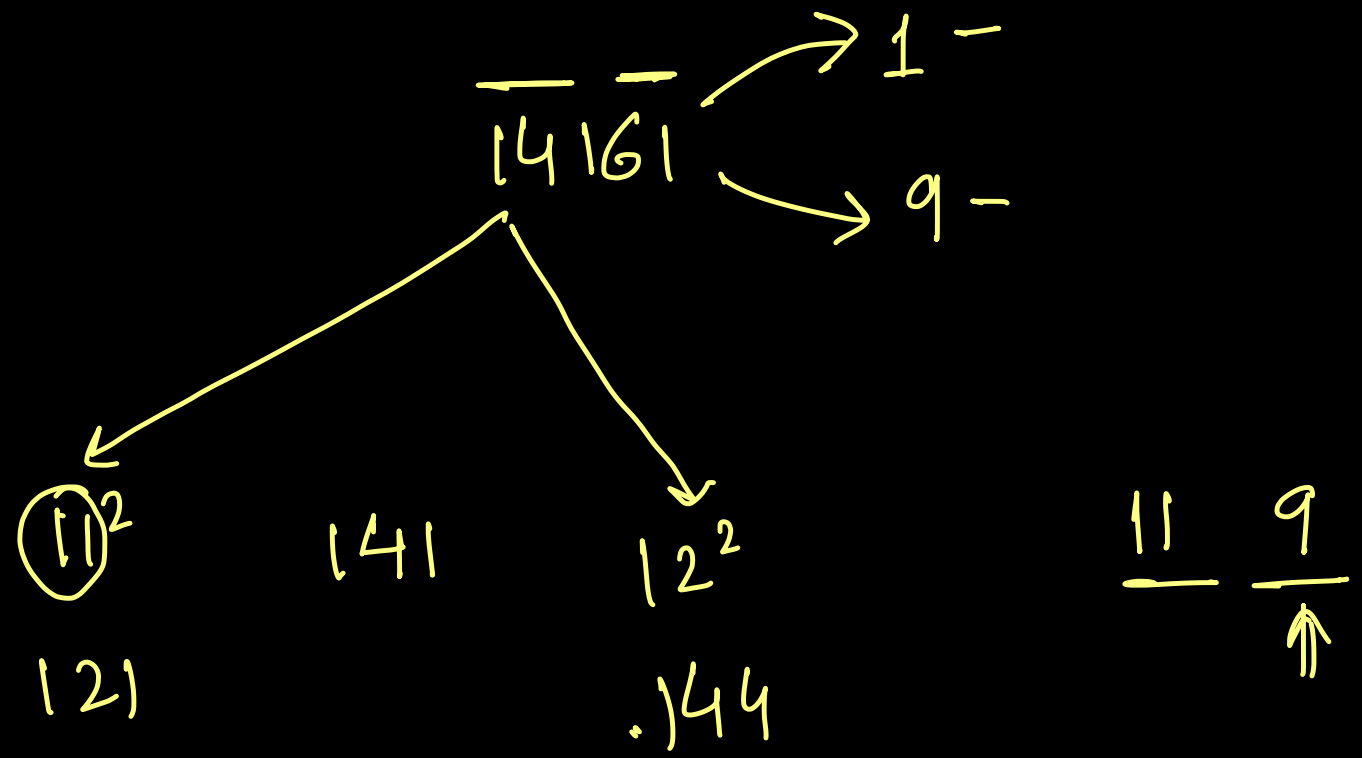
$\sqrt{14161} = ?$

A. 129

B. 119

C. 121

D. None of these



$\sqrt{0.04} = ?$

A. 0.002

B. 0.02

C. 0.2

D. None of these

$$\sqrt{\frac{4}{100}} = \frac{2}{10} = 0.2$$

If $\frac{9^n \times 3^5 \times (27)^3}{3 \times (81)^4} = 27$ then n = ?

A. 3

B. 2

C. 1

D. 0

* $(a^m)^n = a^{m \times n}$
* $a^m \times a^n = a^{m+n}$
* $\frac{a^m}{a^n} = a^{m-n}$

$$\frac{(3^2)^n \times \boxed{3^5 \times (3^3)^3}}{\boxed{3 \times (3^4)^4}} = 3^3$$

3^{14} ; 3^{2n} ; 3^{16} ; 3^{17}

$$3^{2n} = \frac{3^3 \times 3^{17}}{3^{14}} = \frac{3^{20}}{3^{14}}$$

$$3^{2n} = 3^6$$

$$3^{2n} = 3^{2 \times 3}$$

$2n = 2 \times 3 \Rightarrow \therefore \boxed{n = 3}$

Ram went to a market and bought one copy of a Mathematics book and two pencils for ₹165. Rahim went to the same market and bought another copy of the same book and ten pencils of the same brand for ₹169. The price of each pencil was

A. ₹0.50
B. ₹1
C. ₹0.75
D. ₹2

Ram → 1 book + 2 pencil = Rs. 165

Rahim → 1 book + 10 pencil = Rs. 169

Difference ⇒ 8 pencil = Rs. 4

1 pencil = $\frac{4}{8}$ = Rs. 0.50

How many $\frac{1}{8}$ are in $\frac{1}{2}$?

A. 8

B. 4

C. 2

D. 16

$$\frac{1}{8} \times x = \frac{1}{2}$$

$$x = \frac{1}{2} \times \frac{8}{1} = 4$$

English
Reasoning
Quants

The difference of the place value and the face value of the number 3 in 12345 is

A. 299

B. 297

C. 298

D. None of these

300 - 3 = 297

place value = 300

face value = 3

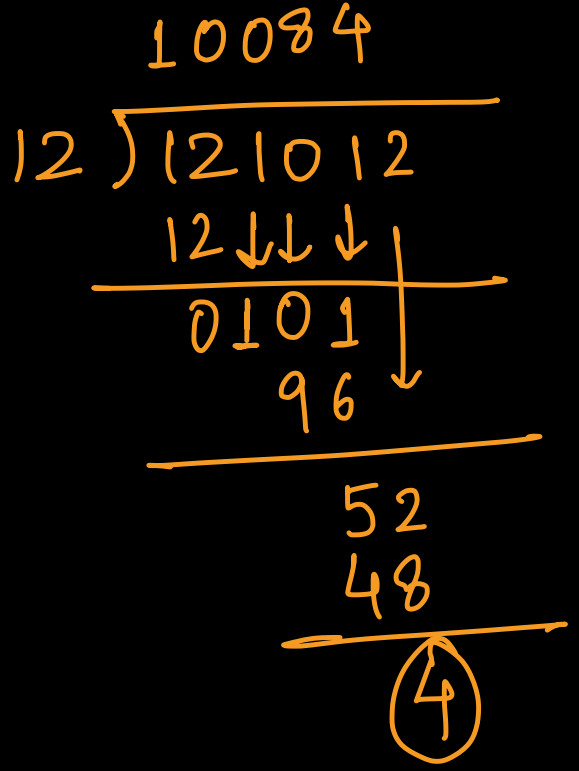
When 121012 is divided by 12, the remainder is

A. 0

B. 2

C. 3

D. 4



The average of 10, 12, 16, 20, p and 26 is 17. Find the value of p.

Avg = Sum / Total nos.

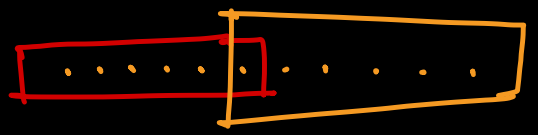
(a) 17
(b) 18
(c) 15
(d) 16

$$\frac{10+12+16+20+p+26}{6} = 17$$

$$p + 84 = 102$$

$$p = 18$$

The average of 11 results is 60 marks. If the average of first six results is 59 marks and that of the last six is 62 marks, then the sixth result contains



(a) 65 marks
(b) 66 marks
(c) 60 marks
(d) 61 marks

$$\frac{T_{11}}{11} = 60 \Rightarrow T_{11} = 660$$

$$\frac{T_{F6}}{6} = 59 \Rightarrow T_{F6} = 354$$

$$\frac{T_{L6}}{6} = 62 \Rightarrow T_{L6} = 372$$

6^{th} term $= 726 - 660 = 66$

The average wage of workers in a factory is ₹ 6000 . There are 12 officers having an average wage of ₹ 14000, while the average wage of the remaining persons is ₹ 5600, the number of the workers in that factory is

A. 242

B. 252

C. 240

D. 230

Total = x

Total of all = 6000 x x

$Avg = \frac{Total}{nos.}$

officer total = 14000 x 12 = 168000

total of rem. = 5600 x (x-12) = 5600x − 67200

6000x = 168000 + 5600x − 67200

400x = 100800 ⇒ x = $\frac{100800}{400}$ = 252

The average of 5 numbers is 20 and 4 of the numbers are 10, 15, 20 and 25. If the numbers are arranged in ascending order, then the average of the last three is

A. 25

B. 18.75

C. 24

D. 22.23

$$\frac{10+15+20+25+x}{5} = 20 \quad (x \to 30)$$

$$70 + x = 100$$

$$x = 30$$

10, 15, 20, 25, 30

$$\frac{75}{3} = 25$$

The least ratio among 10 : 18, 7 : 21, 12 : 16, 8 : 20 is

A. 12 : 16
B. 10 : 18
C. 8 : 20
D. 7 : 21

$\frac{10}{18} = 0.5 \uparrow$

$\frac{7}{21} = \frac{1}{3} = 0.33\ldots$

$\frac{12}{16} = \frac{3}{4} = 0.75$

$\frac{8}{20} = \frac{4}{10} = \frac{2}{5} = 0.4$

If x be the mean proportion between (x - 2) and (x - 3), then the value of x is

a, b, c

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

A. 6

B. 5

C. 6/5

D. 5/6

$$\frac{x-2}{x} = \frac{x}{x-3}$$

$$x^2 = (x-2)(x-3)$$

$$x^2 = x^2 - 5x + 6$$

$$5x = 6$$

$$x = \frac{6}{5}$$

The fourth proportional of the numbers 12, 16, 18 is

a, b, c, d

$\frac{a}{b} = \frac{c}{d}$ ← 4th proportional

A. 28

B. 30

C. 20

D. 24

$\frac{12}{16} = \frac{18}{x}$

$x = \frac{18 \times 16}{12} = 24$

A certain number is divided into two parts such that 5 times the first part added to 11 times the second part makes 7 times the whole. The ratio of the first part to the second part is

$X = m + n$

$\frac{m}{n} = ?$

A. 2 : 1
B. 5 : 11
C. 1 : 2
D. 2 : 3

$5m + 11n = 7X$

$5m + 11n = 7(m+n)$

$5m + 11n = 7m + 7n$

$5m - 7m = 7n - 11n$

$-2m = -4n$

$\frac{m}{n} = \frac{4}{2}$

$\therefore \boxed{\frac{m}{n} = \frac{2}{1}}$

If 16% of x is same as 12% of 48, then x = ?

(a) 24
(b) 36
(c) 32
(d) 40

$$\frac{16}{100} \times x = \frac{12}{100} \times 48$$

$$x = \frac{3\cancel{12}}{\cancel{16}_{4}} \times \cancel{48}^{12}$$

$$\therefore \boxed{x = 36}$$

80% of 1450 is

(a) 1160

(b) 1235

(c) 1045

(d) 1250

$\frac{80}{100} \times 1450 = 1160$

0.008 is what per cent of 0.2?

(a) 0.4
(b) 2
(c) 40
(d) 4

$$\frac{0.008}{0.2} \times 100 = \frac{0.8}{0.2} = 4\%$$

If x % of $\frac{25}{2}$ is 150, then the value of x is

A. 1000

B. 1200

C. 1400

D. 1500

$$\frac{x}{100} \times \frac{25}{2} = 150$$

$$x = 150 \times 8$$

$$x = 1200$$

10% of 15% of 20% of ₹ 500 is ?

A. ₹ 225

B. ₹ 150

C. ₹ 67

D. ₹ 1.50

$$\frac{10}{100} \times \frac{15}{100} \times \frac{20}{100} \times 500$$

$$= \frac{3 \times 5}{10 \times \frac{10}{2}} = \frac{3}{2} = 1.5$$

If 35% of a number is 12 less than 50% of that number, then the number is

(a) 80
(b) 60
(c) 50
(d) 40

X

$$\frac{50}{100} \text{ of } X - \frac{35}{100} \text{ of } X = 12$$

$$\frac{50x}{100} - \frac{35x}{100} = 12$$

$$\frac{15x}{100} = 12 \Rightarrow x = \frac{12 \times 100}{15}$$

$$x = 80$$

What per cent of 400 is 60?

(a) 6

(b) 12

(c) 15

(d) 20

$$\frac{x}{100} \times 400 = 60$$

$$x = \frac{60}{4} = 15\%$$

If the loss on an article is 5% and its cost price is ₹ 90, selling price .

A. ₹ 95.50
B. ₹ 85.50
C. ₹ 85
D. ₹ 95

$90 \times \frac{5}{100} = \frac{45}{10} = 4.5$

$= 85.5$

A defective TV costing 5000 is being sold at a loss of 50%. If the price is further reduced by 50%, then its selling price is

A. ₹ 1225
B. ₹ 1250
C. ₹ 1025
D. ₹ 1200

CP = 5000

loss = 50%

SP after loss = 2500

New = 1250

A businessman marks his goods at such price that after allowing a discount of 15%, he makes a profit of 20%. The marked price (in ₹) of an article having cost price ₹ 170 is

MP = ?

CP = 170

A. 236

B. 220

C. 240

D. 204

CP = 170, Discount = 15%., Profit = 20%, MP = 'x'

$$\text{Profit} = \frac{20}{100} \times 170 = \text{Rs. } 34$$

SP = CP + Profit

SP = 170 + 34 = 204

SP = MP − Discount

$$SP = MP - \frac{15\,MP}{100}$$

$$204 = \frac{85\,MP}{100}$$

$$\frac{204 \times 100}{85} = MP$$

$$MP = 240$$

Reasoning ONE SHOT

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