

What is the approximate average cost of each ball?



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MODEL QUESTIONS

- A bag contains 12 red, 15 green and 23 blue balls such that cost of each red ball is Rs. 24, cost of each green ball is Rs. 38 and cost of each blue ball is Rs. 27. What is the approximate average cost of each ball?
(a) Rs. 24 (b) Rs. 30 (c) Rs. 22 (d) Rs. 26 (e) Rs. 28
- A mixture contains 25% liquid A, 32% liquid B and remaining quantity of liquid C. If the difference between quantities of liquid A and C is 36 liters, then find the quantity of mixture
(a) 150 (b) 200 (c) 250 (d) 300 (e) 175
- The ratio of the length and diagonal of a rectangle is 4 : 5. If the area of the rectangle is 108 cm², what is its perimeter?
(a) 36 cm (b) 38 cm (c) 40 cm (d) 42 cm (e) 44 cm
- 75% of 60% of X is 335 more than 25% of 20% of Y. If the ratio of X to Y is 8 : 5, what is the

value of X - Y ?
(a) 280 (b) 300 (c) 320
(d) 400 (e) 480

- Monthly income of A and B are in the ratio 2 : 3 respectively. A started a business by investing 80% of his monthly income and after 4 months B joined him by investing 60% of his monthly income. What will be the ratio of profit received by A and B after one year partnership?
(a) 3 : 2 (b) 5 : 4 (c) 6 : 5
(d) 4 : 3 (e) 8 : 7

Directions (Q. No. 6-10) : Study the following information carefully and answer the related questions

Following table represents the data regarding number of marks obtained by five students.

Maximum marks in each subject = 80

Student	English	Science	hindi	Mathe- matics	Social- science
A	65	45	42	30	66
B	40	38	58	50	45
C	57	54	50	48	44
D	34	60	47	64	32
E	50	40	55	35	62

- What is the ratio of total marks obtained by E in English and Science taken together to the total marks obtained by A in Hindi and Social taken together?
(a) 5 : 6 (b) 3 : 4 (c) 6 : 7



Also useful for
Other Competitive Exams

- Total marks obtained by D and E taken together in Hindi are approximately what percent more/less than total marks obtained by them in Science?
(a) 4% (b) 2% (c) 6%
(d) 10% (e) 8%
- What is the average of marks obtained by all given students taken together in Mathematics?
(a) 41.4 (b) 42.4 (c) 43.4
(d) 44.4 (e) 45.4
- What is the overall percentage marks obtained by C in all given subjects taken together?
(a) 60.25% (b) 61.25%
(c) 62.25% (d) 63.25%
(e) 64.25%
- What is the difference between total marks obtained by B, C and D taken together in English and

total marks obtained by them in Social Science?

- (a) 14 (b) 10 (c) 12
(d) 18 (e) 16

Directions (Q. No. 11-15) : What value will come in place of question mark (?) in the following question?

- $\sqrt{1225} + ? = 2\frac{1}{6}$ of 102
(a) 195 (b) 186 (c) 177
(d) 175 (e) 176
- $\frac{73}{384} \frac{96}{584} ? = 15$
(a) 480 (b) 466 (c) 488
(d) 468 (e) 494
- $\sqrt[3]{125} + \sqrt[3]{4096} - \sqrt[3]{27} = ?$
(a) 15 (b) 18 (c) 25
(d) 17 (e) 11
- $\sqrt{225} + \sqrt{1600} - \sqrt{9025} = ?$
(a) -34 (b) -46 (c) -40
(d) -47 (e) -32
- $32^{0.07} \times 32^{0.53} = ?$
(a) 1 (b) 8 (c) 2
(d) 4 (e) 16

Directions (Q. no. 16-20) : Find the next term in the series.

- 17, 68, 340, 2040, 14280, ?
(a) 27150 (b) 114240
(c) 18680 (d) 48980
(e) 70310
- 1899, 1778, 1678, 1597, 1533, ?

- (a) 1560 (b) 1484
(c) 1512 (d) 1578
(e) 1564
- 4, 16, 36, 66, 108, ?
(a) 172 (b) 190 (c) 164
(d) 126 (e) 136
 - 5, 5, 10, 15, 25, 40, ?
(a) 137 (b) 147 (c) 163
(d) 121 (e) 65
 - 7200, 1200, 240, 60, 20, ?
(a) 50 (b) 34 (c) 30
(d) 10 (e) 46

Directions (Q.No. 21-25) : What approximate value should come in place of the question mark (?) in the following question? (Note : You are not expected to calculate the exact value)

- $40.96 \times 1.012 \times 1.210 = ?$
(a) 58 (b) 50 (c) 45 (d) 40
(e) Cannot be determined
- $617 + 6.0117 + 0.6117 + 6.00117 = ?$
(a) 630 (b) 620 (c) 625
(d) 600 (e) None of these
- $8787 \div 77 \times 92 = ? \times 14$
(a) 720 (b) 780 (c) 840
(d) 810 (e) 750
- $\sqrt{5089} - \sqrt{2641} + \sqrt{1186} = ?$
(a) 54 (b) 90 (c) 40
(d) 20 (e) 30
- $4497 \times 1204 \div 1795 - 2337 = ?$
(a) 660 (b) 700 (c) 950
(d) 850 (e) 1000

Solutions

- b;** Total balls = 12 + 15 + 23 = 50
Total price = 24 × 12 + 38 × 15 + 27 × 23 = Rs. 1479
Average cost of each ball = $\frac{1479}{50}$ = Rs. 29.58 (approximately 30)
- b;** Let the quantity of mixture = a liters
Quantity of liquid A = 25% of a = 0.25a
Quantity of liquid B = 32% of a = 0.32a
Quantity of liquid C = a - 0.25a - 0.32a = 0.43a
Then, 0.43a - 0.25a = 36
A = 200 liters
- d;** Let the length and breadth of the rectangle be 'l' cm and 'b' cm respectively
Given $\frac{l}{\sqrt{l^2 + b^2}} = \frac{4}{5}$
 $\Rightarrow \frac{l^2}{l^2 + b^2} = \frac{16}{25} \Rightarrow \frac{l^2 + b^2}{l^2} = \frac{25}{16}$
 $1 + \left(\frac{b^2}{l^2}\right) = \frac{25}{16} \Rightarrow \left(\frac{b}{l}\right)^2 = \frac{25}{16} - 1$
 $\Rightarrow \left(\frac{b}{l}\right)^2 = \frac{9}{16} \Rightarrow \frac{b}{l} = \frac{3}{4}$
Let b = 3k and l = 4k
Also, lb = 108
 $\Rightarrow 12k^2 = 108 \Rightarrow k^2 = 9$
 $\Rightarrow k = 3$
Perimeter = 2(3k+4k) = 2(21) = 42 cm
- b;** Let X = 8K and Y = 5K

$$\text{So, } \left(\frac{75}{100}\right) \left(\frac{60}{100}\right) 8K - \left(\frac{25}{100}\right) \frac{20}{100} 5K = 335$$

$$\Rightarrow 3.6K - 0.25K = 335$$

$$\Rightarrow 3.35K = 335 \Rightarrow K = 100$$

So, X - Y = 3K = 300

- d;** Let 2a and 3a are monthly income of A and B respectively.
Investment of A = 80% of 2a = 8a/5
Investment of B = 60% of 3a = 9a/5
A's period of investment = 12 months
B's period of investment = 12 - 4 = 8 months
Profit ratio,
A : B = 12 $\left(\frac{8a}{5}\right)$: 8 $\left(\frac{9a}{5}\right)$ = 4 : 3

- a;** Total marks obtained by E in English and Science taken together = 50 + 40 = 90
Total marks obtained by A in Hindi and Social Science taken together = 42 + 66 = 108
Ratio = 90 : 108 = 5 : 6
- b;** Total marks obtained by D and E taken together in Hindi = 47 + 55 = 102
Total marks obtained by D and E taken together in Science = 60 + 40 = 100
Difference = 102 - 100 = 2
Percentage = $\left(\frac{2}{100}\right) 100 = 2\%$

- e;** Average of marks obtained by all given students taken together in Mathematics = $\frac{(30+50+48+64+35)}{5} = 45.4$
- d;** Total maximum marks = 5 × 80 = 400
Total marks obtained by C = 57 + 54 + 50 + 48 + 44 = 253
Therefore, percentage = $\left(\frac{253}{400}\right) 100 = 63.25\%$
- b;** Total marks obtained by B, C and D taken together in English = 40 + 57 + 34 = 131
Total marks obtained by B, C and D taken together in Social Science = 45 + 44 + 32 = 121
Difference = 131 - 121 = 10
- b;** ? = 102 $\left(\frac{13}{6}\right) - \sqrt{1225}$
= 17 × 13 - 35 = 221 - 35 = 186
- a;** ? = $\frac{(15 \ 584 \ 384)}{(73 \ 96)}$
= 15 $\left(\frac{584}{73}\right) \left(\frac{384}{96}\right) = 15 \times 8 \times 4 = 480$
- b;** $5^3 = 125, 16^3 = 4096, 3^3 = 27$
 $? = \sqrt[3]{125} + \sqrt[3]{4096} - \sqrt[3]{27}$
= 5 + 16 - 3 = 18
- c;** $15^2 = 225, 40^2 = 1600, 95^2 = 9025$
 $? = \sqrt{225} + \sqrt{1600} - \sqrt{9025}$
= 15 + 40 - 95 = -40
- b;** ? = $32^{(0.07+0.53)}$
= $32^{0.60} = 32^{3/5}$

- Since, $32^{1/5} = 2, ? = 2^3 = 8$
- b;** pattern is as follows:
 $17 \times 4 = 68 \Rightarrow 68 \times 5 = 340$
 $340 \times 6 = 2040$
 $2040 \times 7 = 14280$
 $14280 \times 8 = 114240$
 - b;** The pattern is as follows
 $1899 - 11^2 = 1778$
 $1778 - 10^2 = 1678$
 $1678 - 9^2 = 1597$
 $1597 - 8^2 = 1533$
 $1533 - 7^2 = 1484$
 - c;** The pattern is as follows
 $4 + (3 \times 4) = 16$
 $16 + (4 \times 5) = 36$
 $36 + (5 \times 6) = 66$
 $66 + (6 \times 7) = 108$
 $108 + (7 \times 8) = 164$
 - e;** The pattern is as follows
 $5 + 5 = 10$
 $5 + 10 = 15 \Rightarrow 10 + 15 = 25$
 $15 + 25 = 40 \Rightarrow 25 + 40 = 65$
 - d;** The pattern is as follows
 $7200 \div 6 = 1200$
 $1200 \div 5 = 240 \Rightarrow 240 \div 4 = 60$
 $60 \div 3 = 20 \Rightarrow 20 \div 2 = 10$
 - b;** $40.96 \times 1.012 \times 1.210 = ?$
Here, 40.96 ≈ 41
 $1.012 \approx 1 \Rightarrow 1.210 \approx 1.2$
Now, the expression will become
 $41 \times 1 \times 1.2 \approx ?$
 $\Rightarrow ? \approx 49.2 \approx 50$
 - a;** $617 + 6.0117 + 0.6117 + 6.00117 = ?$
 $\Rightarrow ? \approx 629.62457 \approx 630$
 - e;**
 $8787 \div 77 \times 92 = ? \times 14$

- $\Rightarrow \left(\frac{8787}{77}\right) 92 = ? \times 14$
 $\Rightarrow ? = \frac{(8787 \ 92)}{(77 \ 14)} \Rightarrow ? \approx 750$
- a;** Using approximation
 $\sqrt{5089} - \sqrt{2641} + \sqrt{1186}$
 $\approx \sqrt{4900} - \sqrt{2500} + \sqrt{1156}$
 $= 70 - 50 + 34 = 54$
 $\therefore \sqrt{5089} - \sqrt{2641} + \sqrt{1186} = 54$
- a;** Follow BODMAS rule to solve this question, as per the order given below,
Step - 1 - Parts of an equation enclosed in Brackets' must be solved first, and in the bracket, the BODMAS rule must be followed,
Step - 2 - Any mathematical 'Of' or 'Exponent' must be solved next,
Step - 3 - Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,
Step - 4 - the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated. Given expression is,
 $4497 \times 1204 \div 1795 - 2337 = ?$
Using approx, $4500 \times (1200 \div 1800) - 2340 = ?$
 $4500 < (2/3) - 2340 = ?$
 $3000 - 2340 = ? \Rightarrow 660 = ?$
 $\therefore ? = 660$