

RATIO, PROPORTION AND VARIATION

- (1) If $x/5 = y/8$, then $(x+5) : (y+8)$ is equal to :
(a) 3:5 (b) 13:8 (c) 8:5 (d) 5:8 (e) 7:9
- (2) In a bag there are 1 Rupee, 50 paise and 25 paise coins in the ratio 5:4:8 respectively. In total, there are 306 rupees in the bag. How many 50 paise coins are there in the bag?
(a) 72 (b) 136 (c) 36 (d) 68 (e) None of these
- (3) A and B have books in the ratio of 3 : 4, while B and C have books in the ratio 3 : 2. If the total number of books with the three of them is 116, how many books does A have?
(a) 32 (b) 24 (c) 36 (d) 48 (e) 42
- (4) Given that $5x = 9y$, find the value of $\frac{3x+6y}{6y+4x}$.
(a) 49/55 (b) 48/69 (c) 57/66 (d) 3/4 (e) 49/58
- (5) What number must be subtracted from both: the numerator and the denominator of the fraction $27/35$ that it may become 2:3?
(a) 9 (b) 10 (c) 11 (d) 20 (e) None of these
- (6) $\frac{a}{b+c} = \frac{b}{c+a} = \frac{c}{a+b}$ and $a + b + c \neq 0$, then each ratio is equal to
(a) $1/3$ (b) $1/4$ (c) 1 (d) $1/2$ (e) $\frac{2}{3}$
- (7) Divide Rs. 5130 among P, Q, R and S such that 3 times P's share = 4 times Q's share = 5 times R's share = 6 times S's share. What is the share of Q (in Rs)?
(a) 1250 (b) 1350 (c) 1450 (d) 1380 (e) 1480
- (8) The ratio of a and b is 3 : 7. If a is 20 less than b, find the value of $a + b$.
(a) 20 (b) 30 (c) 40 (d) 50 (e) 60
- (9) Rs 3000 are distributed among A, B and C such that A gets $2/3^{\text{rd}}$ of what B and C together get and C gets $1/2$ of what A and B together get. What is C's share?
(a) Rs 750 (b) Rs 1000 (c) Rs 1200 (d) Rs 800 (e) None of these
- (10) An amount of Rs. 735 was divided between A, B and C. If each of them had received Rs. 25 less, their shares would be in the ratio of 1 : 3 : 2. Find the share of C.
(a) 245 (b) 220 (c) 270 (d) 250 (e) 300
- (11) If a carton containing 2 dozen mirrors is dropped, which of the following cannot be the ratio of broken mirrors to unbroken mirrors?
(a) 2 : 1 (b) 3 : 1 (c) 3 : 2 (d) 7 : 5 (e) 1 : 5
- (12) The incomes of A and B are in the ratio of 3:2 and their expenditures are in the ratio 5:3. If each saves Rs 1000, then A's income can be :
(a) Rs 3000 (b) Rs 4000 (c) Rs 4500 (d) Rs 6000 (e) Rs 9000
- (13) Amar, Akbar and Anthony were in a cold country. They wanted to make a bonfire. Amar contributed 5 wood logs, Akbar contributed 4 wood logs. Anthony had no wood logs, so he contributed Rs. 9 to Amar and Akbar. What money Amar should get?
(a) Rs.5 (b) Rs.4 (c) Rs. 6 (d) Rs.7 (e) Rs.4.50
- (14) The cost of a diamond varies as the square of its weight. A diamond weighing 10 decigrams costs Rs.1600. the diamond broke down into pieces weighing 7 and 3 decigrams. What would be the loss owing to its breakage?
(a) Rs.672 (b) Rs.923 (c) Rs.600 (d) Rs.1,000 (e) Rs.540
- (15) A, B and C enter into a partnership. A contributes one-third of the whole capital while B contributes as much as A and C together contribute. If the profit at the end of the year is Rs 84000, how much would each receive(in thousands)?
(a) 24, 20, 40 (b) 28, 42, 14 (c) 28, 42, 10 (d) 28, 14, 42 (e) None of these
- (16) 10 years ago the ratio between A's age and B's age was 3 : 2. 8 years hence, the ratio between their ages would be 9 : 7. Find A's present age.
(a) 34 years (b) 40 years (c) 42 years (d) 44 years (e) 46 years

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- (17) Two numbers are in the ratio of 5:8 and if 9 is added to each, the ratio becomes 8:11. What is the smaller number?
(a) 5 (b) 10 (c) 15 (d) 20 (e) None of these
- (18) The ratio of illiterate males to illiterate females in a village is 5 : 3. 60% of the illiterate males have enrolled for a literacy campaign. What is the greatest possible proportion of people enrolled for the literacy campaign from among the illiterate population?
(a) 5/8 (b) 3/8 (c) 3/5 (d) 3/4 (e) 4/5
- (19) An engine without compartments can move with a speed of 60 kmph. Reduction in speed of the engine varies as the square-root of number of compartments attached. With 4 compartments, the engine can move with a speed of 40 kmph. Find the minimum number of compartments to be attached so that engine fails to move?
(a) 100 (b) 99 (c) 49 (d) 50 (e) 36
- (20) In the above question, maximum number compartments with which the engine can move is
(a) 99 (b) 98 (c) 35 (d) 48 (e) 49
- (21) At constant temperature, pressure of a definite mass of gas is inversely proportional to the volume. If the pressure is reduced by 20%, what will be the change in the volume?
(a) 16.66% decr (b) 25% incr (c) 25% decr (d) 16.66% incr (e) None of these
- (22) If x varies directly as y , and inversely as z , and $x=14$ when $y=10$; find z when $x=49$, $y=45$.
(a) 7/5 (b) 5/6 (c) 10 (d) 5/7 (e) Cannot be determined
- (23) To hold a tea party, the expenses are partly constant and party varies as number of guests. When there are 50 guests, the expenses is Rs.1850. when there are 150 guests, the expenses are Rs.4350. find the cost when there are 200 guests.
(a) 5600 (b) 5250 (c) 5350 (d) 5450 (e) None of these
- (24) If $a:b = c:d$, and $e:f = g:h$, then $(ae + bf) : (ae - bf) = ?$
(a) $\frac{(e+f)}{(e-f)}$ (b) $\frac{(cg+dh)}{(cg-dh)}$ (c) $\frac{(ch+dg)}{(ch-dg)}$ (d) $\frac{(e-f)}{(e+f)}$ (e) None of these
- (25) 3 containers A, B and C are having mixtures of milk and water in the ratio of 1:5, 3:5 and 5:7 respectively. If the capacities of the containers are in the ratio 5:4:5, find the ratio of milk to water, if the mixtures of all the three containers are mixed together.
(a) 4:7 (b) 23:19 (c) 47:89 (d) 19:52 (e) 53:115
- (26) If incomes of A and B are in the ratio 4 : 5 and their spending are in the ratio 5 : 6. Then who saves more?
(a) A (b) B (c) Both save equal money (d) Cannot be determined
- (27) Rs. 3280 is divided among A, B, C and D such that A gets twice of what B gets, B gets thrice of what C gets and C gets four times the amount that D gets. Find C's share.
(a) 1920 (b) 960 (c) 320 (d) 80 (e) 560
- (28) A pumpkin is cut into two pieces whose ratio 2 : 3, the bigger of the two is further cut again the ratio of ratio 3 : 4. Find the ratio of each of the three to the entire piece.
(a) 2 : 9 : 12 (b) 6 : 8 : 21 (c) 14 : 9 : 12 (d) 2 : 3 : 4 (e) None of these
- (29) If Rs 58 are divided amongst 150 children such that each girl gets 25 paise and each boy gets 50 paise, how many girls are there?
(a) 52 (b) 54 (c) 62 (d) 68 (e) None of these
- (30) There are total 318 children in 3 classes of a school. The ratio of the students in Class A to Class B is 6:5 and that of the students in Class B to Class C is 3:4. How many students are there in Class A?
(a) 108 (b) 90 (c) 80 (d) 106 (e) None of these

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ANSWER KEY

Question No.	Answer	Question No.	Answer	Question No.	Answer
1	D	11	C	21	B
2	B	12	D	22	E
3	C	13	C	23	A
4	C	14	A	24	B
5	C	15	B	25	C
6	D	16	E	26	D
7	B	17	C	27	C
8	D	18	D	28	C
9	B	19	E	29	D
10	A	20	C	30	A

