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Direction (1-5): In the given questions, two quantities are given, one as 'Quantity 1' and another as 'Quantity 2'. You have to determine relationship between two quantities and choose the appropriate option:

Q1. A is twice as efficient as B. Both can complete a work together in $7\frac{1}{2}$ days.

Quantity 1: Time taken by B to complete the work alone.
Quantity 2: If C is 50% more efficient than A, then time taken by C to complete the work alone.
(a) Quantity 1 > Quantity 2
(b) Quantity 1 ≥ Quantity 2
(c) Quantity 2 > Quantity 1
(d) Quantity 2 ≥ Quantity 1
(e) Quantity 1 = Quantity 2 or Relation cannot be established

Q2. One of the roots of $2x^2 + bx - 5 = 0$ is 1.
Quantity 1: Value of the other root.
Quantity 2: 2.5
(a) Quantity 1 > Quantity 2
(b) Quantity 1 ≥ Quantity 2
(c) Quantity 2 > Quantity 1
(d) Quantity 2 ≥ Quantity 1
(e) Quantity 1 = Quantity 2 or Relation cannot be established

Q3. Two dices are rolled simultaneously.
Quantity 1: Probability that the sum of the numbers that appeared is a multiple of 5.
Quantity 2: 1/6
(a) Quantity 1 > Quantity 2
(b) Quantity 1 ≥ Quantity 2
(c) Quantity 2 > Quantity 1
(d) Quantity 2 ≥ Quantity 1
(e) Quantity 1 = Quantity 2 or Relation cannot be established

Q4. Sum of height and diameter of the cylinder is 28 meter.
Quantity 1: Curved surface area of the cylinder whose respective ratio of height to diameter is 3 : 4
Quantity 2: Curved surface area of the cylinder if height of cylinder is 10 m.
(a) Quantity 1 > Quantity 2
(b) Quantity 1 ≥ Quantity 2
(c) Quantity 2 > Quantity 1
(d) Quantity 2 ≥ Quantity 1
(e) Quantity 1 = Quantity 2 or Relation cannot be established

Q5. Product of digits of a two digits number 'N' is 21
Quantity 1 : N
Quantity 2 : 130–N
(a) Quantity 1 > Quantity 2
(b) Quantity 1 ≥ Quantity 2
(c) Quantity 2 > Quantity 1
(d) Quantity 2 ≥ Quantity 1
(e) Quantity 1 = Quantity 2 or Relation cannot be established

Q6. From container A containing 54 liter of mixture of milk and water in ratio of 8 : 1 , 18 liter of the mixture is taken out and poured into container B in which ratio of milk to water is 3 : 1. If difference between total milk and total water in container B is 30 liter then find the quantity of initial mixture in container B.
(a) 30 Liter
(b) 28 Liter
(c) 32 Liter
(d) 36 Liter
(e) 40 Liter

Q7. In a match of 50 overs, team A's average runs for first thirty overs was 4.5 runs/over while for the remaining 20 overs the average was 5.5 runs/over. Team B chased the target and lost by 10 runs. Find the average runs per over scored by team B. (team B played all the 50 overs).
(a) 4.4
(b) 5.2
(c) 4.7
(d) 5.6
(e) 3.8

Q8. In a bag which contains 40 balls, there are 18 red balls and some green and blue balls. If two balls are picked up from the bag without replacement, then the probability of the first ball being red and second being green is 3/26. Find the number of blue balls in the bag.
(a) 16
(b) 12
(c) 10
(d) 14
(e) 8

Q9. A is 50% more efficient than B. They together start the work and $\frac{7}{12}^{th}$ of work is left after 8 days. Find in what time B alone will complete the whole work.
(a) 36 days
(b) 44 days
(c) 50 days
(d) 40 days
(e) 48 days

Direction (10–15): Given below table shows number of employees joined (at the beginning of the year) & left (at the end of the year) in three companies i.e. A, B & C in three years (2001, 2002 & 2003). Read the data carefully and answer the questions. (Some data are missing).

Years	A		B		C	
	Joined	Left	Joined	Left	Joined	Left
2001	102	_	96	18	84	36
2002	78	24	72	_	108	_
2003	112	_	144	_	124	28

Q10. In year 2000 total employee who joined A is 64 which is 32% of total employee working in A that year and total employee who left A in year 2000 & 2001 is 20 & 32 respectively. If employee left B in year 2002 is 16 and this company starts in 2001, then find total employee working in B at the end of 2002 is approximate what percent of total employee working in A at the end of 2002?

(a) 36%
(b) 48%
(c) 52%
(d) 44%
(e) 56%

Q11. The ratio of total employee who left B & C in the year 2002 is 7 : 9 and total employee working in B & C at the end of 2000 are 160 & 172 respectively. If total employee working at the end of 2003 in C is 406, then find total employee working in B at the end of 2002?

(a) 284
(b) 296
(c) 298
(d) 302
(e) 306

Q12. Total employee working in B at the end of 1999 is 220 and 28 employee left company in 2000, while 32 new employees joined the company. If respective ratio of employee left the company B in year 2002 & 2003 is 6 : 7 and total employee working in B at the end of 2003 is 466, then find total employee left B in 2002 & 2003 together?

(a) 52
(b) 48
(c) 42
(d) 36
(e) 32

Q13. The average of total employee left company A in the given three years is 21 and ratio of employee left in 2001 to in 2003 is 7 : 6. If company A start in 2001, then find total employee working in A at the end of 2002 is what percent more than total employee who joined company C in the year 2002?
(a) 20%
(b) 15%
(c) 25%
(d) 30%
(e) 22.5%

Q14. Total employee who left C in the year 2002 is $33\frac{1}{3}\%$ more than total employee who left A in same year and total employee who left B in 2002 is 62.5% of total employee who left C in same year. If all three companies start in 2001 and total 22 employee left A in 2001, then find the respective ratio of employee working in B, C & A at the end of 2002?
(a) 65 : 62 : 69
(b) 66 : 62 : 69
(c) 65 : 61 : 67
(d) 61 : 62 : 69
(e) 65 : 62 : 67

Q15. Each company start in 2001 and ratio of total employee left A in 2001 to that of B & C together in 2002 is 1 : 2. If total employee who left A in 2001 and that of B & C together in 2002 is 36 and total employee who left B in 2002 is 50% of employee who left C in same year, then find difference between total employee working in C at the end of 2003 and total employee working in A at the end of 2002 ?
(a) 92
(b) 82
(c) 72
(d) 96
(e) 86

Directions (16-21): In each of these questions, two equations numbered I and II are given. You have to solve both the equation and give answer
(a) if x < y
(b) if x ≤ y
(c) if x > y
(d) if x ≥ y
(e) if x = y or the relationship cannot be established

Q16. I. $2x^2 + 11x + 15 = 0$
II. $4y^2 + 13y + 9 = 0$

Q17. I. $x^2 - 36x + 324 = 0$
II. $y^2 - 35y + 216 = 0$

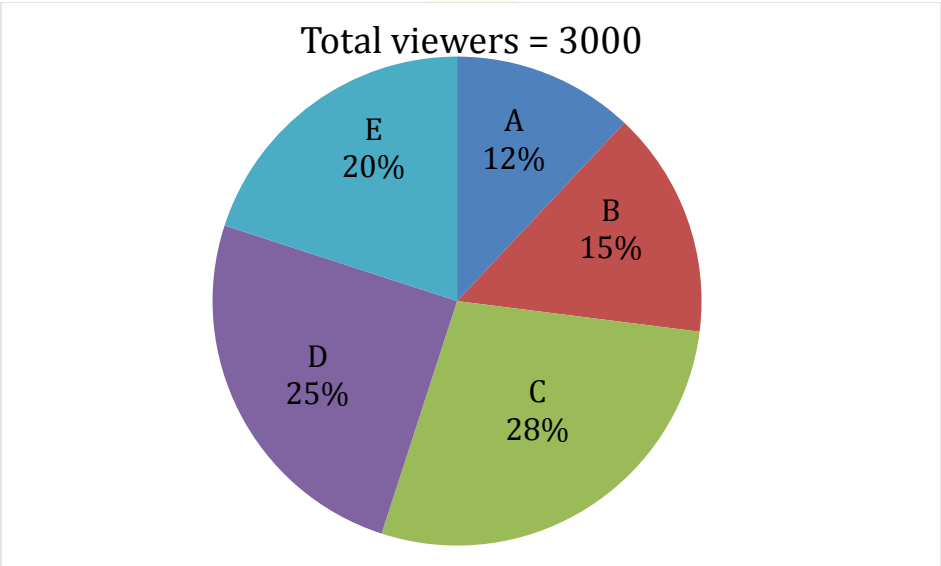
Q18. I. $x = (216)^{1/3}$
II. $y^2 = 6$

Q19. I. $2x^2 + 17x + 35 = 0$
II. $3y^2 + 17y + 24 = 0$

Q20. I. $x^2 + 72 = 108$
II. $y^3 + 581 = 365$

Q21. I. $8x^2 + 58x + 39 = 0$
II. $8y^2 - 14y - 15 = 0$

Direction (22-27): Given pie chart shows percentage distribution of viewers of a Tv channel in five different villages (A, B, C, D & E) and table shows number of viewers who subscribed the channel. Read the data carefully and answer the questions.
Note – Total viewers = Total subscriber + Total unsubscribe



Villages	People who subscribed
A	220
B	250
C	440
D	350
E	180

Q22. Total unsubscribed viewers from B & E together is what percent more than total unsubscribed viewers from C?
(a) 50%
(b) 55%
(c) 45%
(d) 40%
(e) 42%

Q23. If total male unsubscribed viewers in D is $66\frac{2}{3}\%$ more than that of female unsubscribed viewers, then find ratio of total male unsubscribed viewers in D to total unsubscribed viewers in A & C together?
(a) 25 : 53
(b) 25 : 54
(c) 7 : 9
(d) 23 : 54
(e) 2 : 3

Q24. Find the central angle for total unsubscribed viewers in B & C and total subscribed viewers in E together with respect to total viewers?
(a) 133.6°
(b) 136.6°
(c) 63.6°
(d) 130.6°
(e) 93.6°

Q25. Out of total viewers in village C, $46\frac{3}{7}\%$ are female and $\frac{7}{13}th$ of total female are unsubscribed viewers, then find total unsubscribed male viewers from village C?
(a) 170
(b) 180
(c) 210
(d) 190
(e) 250

Q26. In another village F total subscribed viewers are 20% more than total unsubscribed viewers in village A and total subscribed viewers in village F are $\frac{3}{7}th$ of total viewers in that village. Find total unsubscribed viewers from village F is what percent less than total unsubscribed viewers from village C?
(a) 42%
(b) 44%
(c) 48%
(d) 46%
(e) 40%

Q27. If the above data given for the year 2017 and in 2018 total viewers increased by 40%, while percentage distribution of viewers of TV channel in five different villages remain same as in 2017. If number of subscribed viewers from village A, B, D & E in 2018 increased by 25%, 20%, 14% & 10% respectively and total subscribed viewer from all the five village in 2018 are 1400, then find total unsubscribed viewers from C in 2018?

(a) 942
(b) 952
(c) 948
(d) 956
(e) 964

Directions (28-32): The following questions are accompanied by two statements A and B. You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

(a) Statement A alone is sufficient to answer the question but statement B alone is not sufficient to answer the questions.
(b) Statement B alone is sufficient to answer the question but statement A alone is not sufficient to answer the question.
(c) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(d) Either statement A or statement B by itself is sufficient to answer the question.
(e) Statements A and B taken together are not sufficient to answer the question

Q28. What is the value of rate of interest?

A. A sum of Rs 8000 is invested at simple interest for 3 years in scheme A which offers a certain rate of interest. Amount obtained from scheme A is equal to the amount obtained when Rs 9000 is invested in scheme B for 2 years at C.I.
B. Rate of interest for scheme B is same as rate of interest for scheme A.

Q29. 4 men & 18 women can do a piece of work in 2.5 days, then in how many days 12 woman can complete the same piece of work?

A. Ratio of efficiency of men to women is 3 : 2.
B. 6 men & 6 women can complete the same work in 4 days.

Q30. What will be speed of stream, if speed of boat in still water is 22.5 km/hr?

A. The time taken by boat to cover 120 km upstream is 4 hours more than time taken by boat to cover same distance in downstream.
B. Boat takes total 15 hours to cover 150 km in downstream and upstream.

Q31. What will be sum of two natural numbers X & Y?

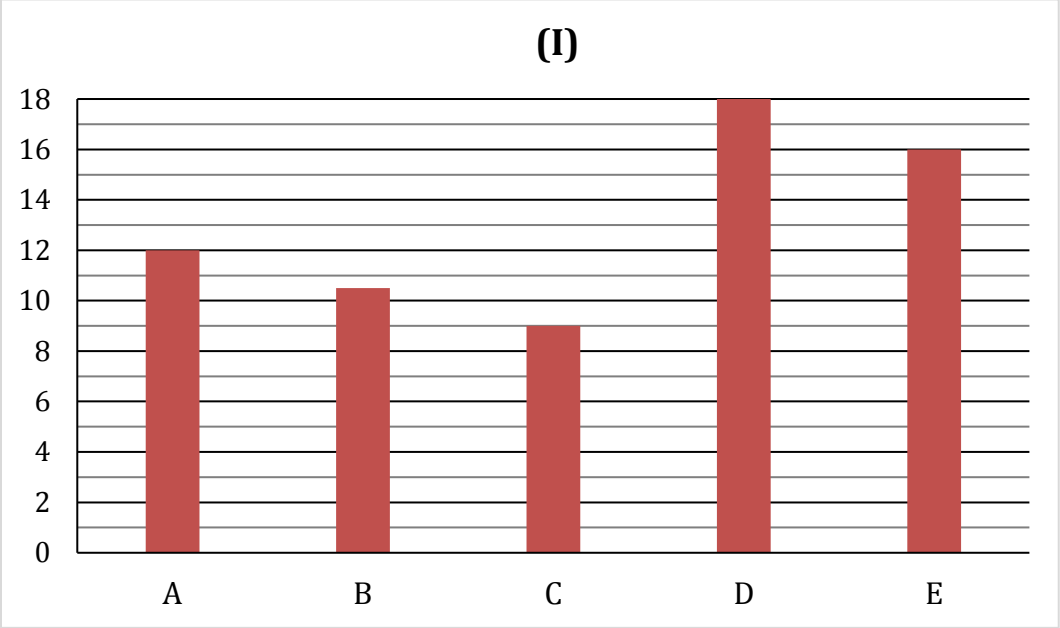
A. X & Y both are multiple of 24, while X is 50% more than Y.
B. $\frac{X}{30}$ & $\frac{Y}{40}$ both are natural number.

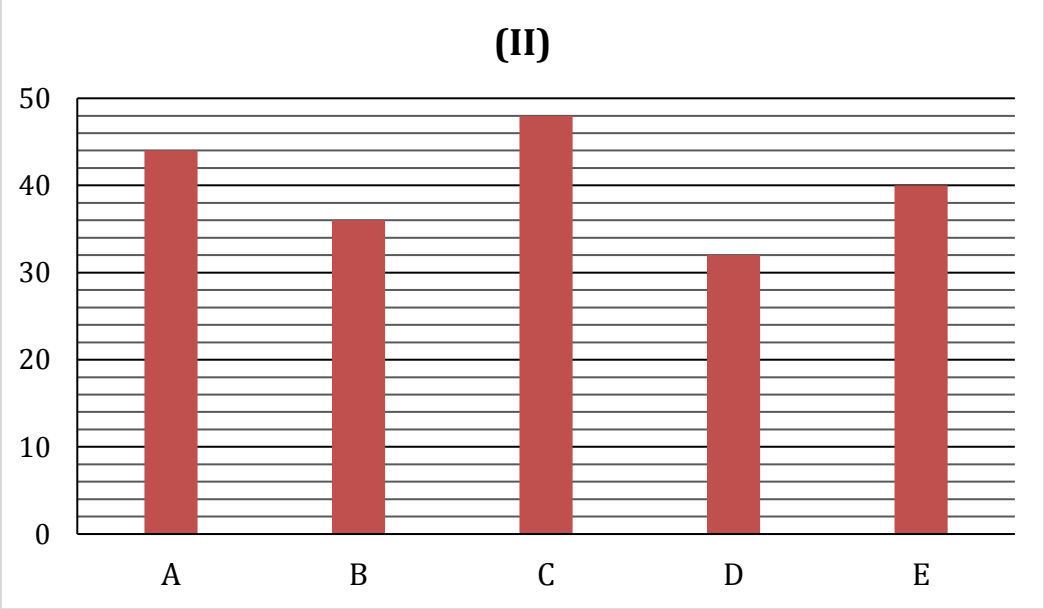
Q32. There is (2a+ 16) students in a class with three streams, i.e. art, science & commerce. The ratio of students who take art to science is 4 : 1. Find total number of students in class.

A. Total students who take art is 8 more than total students who take commerce and probability of selecting one student who take science is $\frac{1}{8}$.

B. Total commerce students in class are 25% less than total art students in the class.

Direction (33-38): Given below bar graph (I) shows total students (Boys + girls) in thousands who have taken admissions in five different college and bar graph (II) shows percentage of girls taken admission in these five colleges. Read the data carefully and answer the questions.





Q33. Total boys taken admission in college B & D together are what percent more than total boys taken admission in E?
(a) 92.5%
(b) 97.5%
(c) 99.5%
(d) 102.5%
(e) 84.5%

Q34. 75% and 80% of total girls taken admission in college A & C respectively appeared in exam and total students appeared in exam from A & C is 17910. If total boys appeared in exam from A is 6048, then find difference between boys who did not appeared in exam from college A & C?
(a) 438
(b) 428
(c) 418
(d) 408
(e) 448

Q35. Find the ratio of total boys taken admission in college A & B together to total girls taken admission in D & E together?
(a) 13 : 11
(b) 23 : 19
(c) 21 : 17
(d) 21 : 19
(e) None of these

Q36. If in college F total girls taken admission are 62.5% more than that of total girls taken admission in C and total boys taken admission in college E & F together is 20580, then find percentage of girls taken admission in college F?
(a) 33%
(b) 43%
(c) 39%
(d) 37%
(e) 45%

Q37. In each college there are only three streams (i.e. science, commerce & art) and in college B respective ratio of students taken admission in science, commerce & art is 2 : 1 : 4. If out of total girls taken admission in college B, 40% taken admission in science stream, 25% taken admission in commerce stream, then find difference between boys taken admission in art & science streams from college B?
(a) 3242
(b) 3464
(c) 3189
(d) 3345
(e) 2964

Q38. Find the average number of boys taken admission from all the five given colleges?
(a) 7992
(b) 7982
(c) 6848
(d) 7292
(e) None of these

Q39. There is a square field of area 'X' square meters. A cylindrical ditch of radius 7 meters and depth 2 meters is dug, and the earth is taken out and spread over the remaining part of the square field, the height of square field which goes up by 0.77 meters. What is the value of 'X' ?
(a) 548 m^2
(b) 524 m^2
(c) 518 m^2
(d) 554 m^2
(e) 504 m^2

Q40. A man invested an amount at the rate of 10% p.a. on compound interest and after two years he again invested half of the initial amount. If man got Rs. 457.2 Rs. as interest after three years, find the amount received by man after three years, if he invested same amount on simple interest at rate of 15% p.a.?
(a) 1740 Rs.
(b) 1720 Rs.
(c) 1760 Rs.
(d) 1780 Rs.
(e) None of these

Q41. A and B entered in a business by making investment of Rs. 4000 & Rs. 5500 respectively. After six months A & B withdrew Rs. 1000 and Rs. 1500 respectively and C joined them with capital of Rs. 4x. If after one year and three months C received Rs. 2250 as profit share out of total profit of Rs. 12250, then find investment of C?
(a) Rs. 3600
(b) Rs. 3200
(c) Rs. 4400
(d) Rs 3000
(e) Rs. 2800

Q42. Train A can cross a man in 8 sec and a 180 m long platform 'P' in 17 sec. If train A cross train B which is running in opposite direction at speed of 108 km/hr in 8 sec, then find time taken by train B to cross platform P?
(a) 16 sec
(b) 11 sec
(c) 14 sec
(d) 12 sec
(e) 15 sec

Q43. There are two shopkeepers, first shopkeeper calculates his profit percent on the selling price whereas the second shopkeeper calculates his profit percent on the cost price. If the selling price for both the shopkeeper is same and the difference between their profits is Rs.175. Then, calculate the sum of the cost price for both the shopkeeper if the profit percent for the both shopkeeper is 25%?

(a) Rs 5425
(b) Rs 4875
(c) Rs 4675
(d) Rs 5275
(e) Rs 5325

Q44. If 6 years are subtracted from the present age of Ayush and takes 25% of that then we get the present age of his only son. 4 years ago, his daughter's age is 7 years more than his son. Sum of daughter's present age and his wife's present age is 10 years more than Ayush's present age then find the present age of Ayush if average of present age of entire family is 30.25 yr?

(a) 45 year
(b) 50 year
(c) 60 year
(d) 40 year
(e) 36 year

Q45. 'X' is a bread seller who marked up price of each bread packet by 150% above and allow discounts of 40% and made a profit of Rs. 30 on each bread packet. If 'X' allows 37.5% discount on each packet, then find how much profit he gets on selling 80 bread packets?

(a) Rs 2750
(b) Rs 3200
(c) Rs 2500
(d) Rs 2700
(e) Rs 2400

Direction (46-50): Read the data carefully and answer the questions.

A company is the producer of bottles and it used to sell bottles through distributor on a condition that on selling the stock of every 50 bottles, he will get Rs. 1000 as commission. The distributor is responsible to sell all those bottles to retailers. If he marks the bottles at the price which is 30% above the production cost (cost price) and allows a discount of Y%. He sells total of 'X' bottles which is 40 less than total received stock by him. Total production price of whole stock of bottles received by him to sell to retailers is Rs. 7.8 lakhs. The commission received by distributor is Rs. 7000 and he made a profit of Rs 1.4 lakhs on selling the bottles.

Q46. What is value 'Y' ?

(a) $9\frac{9}{13}\%$

(b) $7\frac{9}{13}\%$

(c) $5\frac{9}{13}\%$

(d) $8\frac{9}{13}\%$

(e) None of these

Q47. What will be ratio of Y : (X + 40)?

(a) 10 : 511

(b) 10 : 503

(c) 10 : 513

(d) 10 : 507

(e) 10 : 509

Q48. Instead of 'Y' employee allow 10% discount on one bottle, then percentage profit of distributor?

(a) 17%

(b) 15%

(c) 12%

(d) 10%

(e) 19%

Q49. If company added given commission in cost price and he give stock of (X + 450) bottles to another distributor who sold all stock, then find new cost price of one bottle?

(a) 2200 Rs.

(b) 2020 Rs.

(c) 2040 Rs.

(d) 2060 Rs.

(e) 2080 Rs.

Q50. If distributor allowed two successive discounts of 5% and 12.5% on marked price, then find the profit made by distributor on selling of one bottle?

(a) 161.25 Rs.

(b) 162.25 Rs.

(c) 172.25 Rs.

(d) 176.25 Rs.

(e) 174.25 Rs.