

SBI Clerk Mains Memory Based Paper 2021 Held on 01st October 2021 –
Quantitative Aptitude

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Directions (1-4): Read the following information carefully and answer the questions given below.

Two types of bus A and B take three rounds namely Round 1, Round 2 and Round 3. The total number of passenger seats in Bus A is 9 and the total number of passenger seats in Bus B is 11.

Bus A: The total number of passengers travelling in Bus A in all rounds together is 24. In round 1 all the passengers are full.

Bus B: The total number of passengers traveling in the 11 seater bus in any of the two rounds is the same which is 6. No passenger seats are full in all the three rounds.

Note:-

Sum of the total number of passengers in round 1 from both Bus A and B is equal to the sum of the total number of passengers in round 2 from both Bus A and B. The ratio of the total number of passengers travelling in round 2 by Bus A and B is 4:3.

1) The price of a ticket for each passenger in round 1 is Rs.100, for each passenger in round 2 is Rs.320 and for each passenger in round 3 is Rs.280 and the return journey ticket price for each round is reduced by 25%. Find the total revenue gained by Bus A and B, if the passengers from round 1 and round 3 are from

Bus A and the passengers from round 2 are from Bus B and the passengers use the same bus for both journeys.

- a) Rs.8400
- b) Rs.8365
- c) Rs.8380
- d) Rs.8378
- e) Rs.8392

2) If 33.33%, 25% and 42.85% of passengers in round 1, round 2 and round 3 from bus A pay the travel expenses through online mode and $\frac{2}{5}$, $\frac{1}{3}$ and $\frac{1}{2}$ of passengers in round 1, round 2 and round 3 from Bus B pay their travel expenses through offline mode, then find the sum of total number of passengers in Bus A from all rounds together pay through offline mode and the total number of passengers in Bus B from all rounds together pay through online mode.

- a) 28
- b) 24
- c) 30
- d) 26
- e) 21

3) Find the ratio of total number of passengers in round 1 from Bus A and B together to the total

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number of passengers in round 2 and round 3
from bus B together.

- a) 7:6
- b) 7:8
- c) 3:4
- d) 5:2
- e) 2:5

4) If the total number of seats in Bus C is 7 and
takes three rounds round 1, round 2 and round 3
and the total number of passengers travelling in

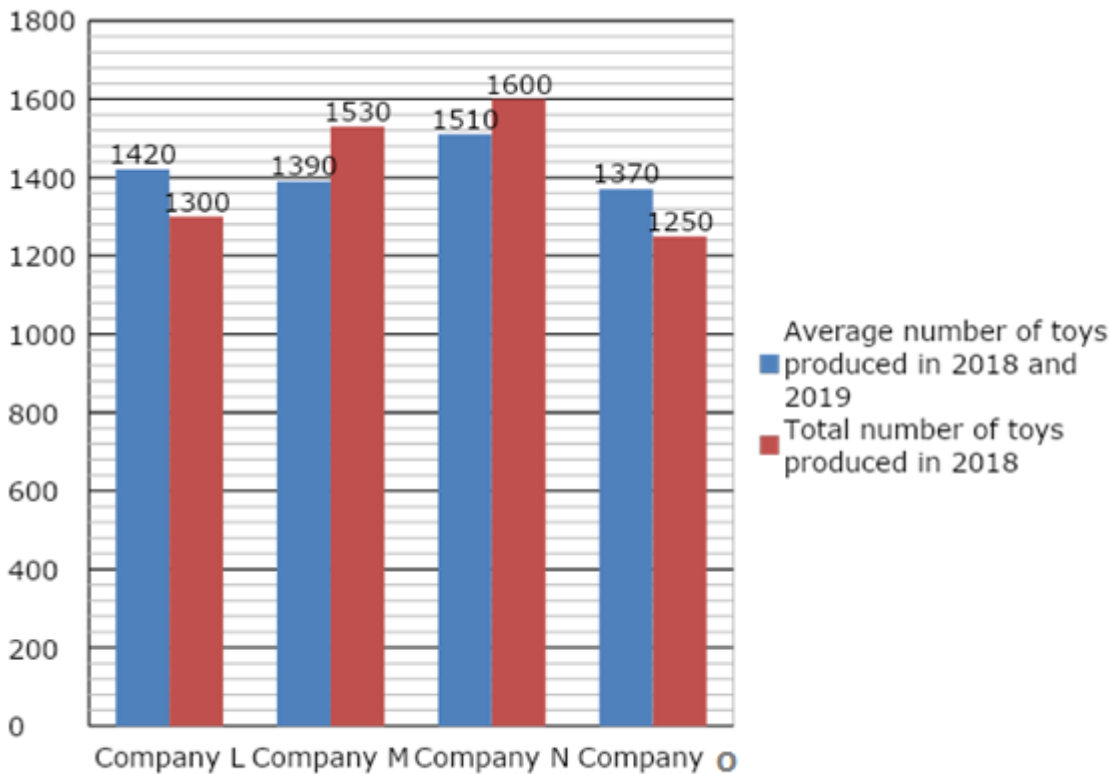
Bus C in round 1 is 20% less than the total
number of passengers travelling in Bus B in
round 1 and the total number of passengers
travelling in Bus C all round together is 18, then
find the total number of travelling passengers in
Bus C in round 2 and round 3.

- a) 12
- b) 15
- c) 14
- d) 19
- e) 17

Directions (5-9): Read the following information carefully and answer the questions given below.

The given bar graph shows the average number of toys produced in 2018 and 2019 and the total number of toys produced in 2018. The given table chart shows the total number of toys sold in 2018 and 2019.

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Company	Total number of toys sold in 2018	Total number of toys sold in 2019
L	$x-275$	$y/3$
M	x	$y/5$
N	$x/2$	$(y/5)+250$
O	$x-765$	$(y/3)-462$
Total	3440	y

5) If the total number of toys produced in 2020 by Company M is 33.33% more than the average number of toys produced in 2019 by Company M and Company N together and the total number of toys sold in 2020 by Company M is equal to $(x/5)+(y/4)$, then find the total number of toys unsold in 2020 by Company M.

- a) 729
- b) 740
- c) 750
- d) 735
- e) 755

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6) Find the difference between the total number of unsold toys in 2019 from all companies together and the total number of unsold toys in 2018 from all companies together.

- a) 250
- b) 270
- c) 260
- d) 245
- e) 280

7) If in the total toys sold by Company L, Company M, Company N and Company O in 2019 25%, 33.33%, $\frac{1}{2}$ and $\frac{5}{13}$ are defective, then find the average number of toys that are sold is non-defective in 2019 from all companies together.

- a) 512.5
- b) 510
- c) 507.5
- d) 515
- e) 505.5

8) If the price of each toy sold in 2018 and 2019 from Company M is Rs.200 and Rs.275 respectively and the price of each unsold toy in 2018 and 2019 from Company M is reduced by 25% and 27.27% of the original price and then the toys are sold, then find the total amount

acquired while selling the toys in 2018 and 2019 by Company M.

- a) Rs.591200
- b) Rs.591600
- c) Rs.591100
- d) Rs.591350
- e) Rs.591400

9) The total number of toys produced by Company A in 2018 and 2019 is equal to the sum of the total number of toys produced in 2018 by Company L and Company O and the total number of toys produced in 2018 by Company A is 60% of the total number of toys produced in 2018 and 2019 by Company A. The total number of toys produced in 2019 by Company A is what percentage of the total number of toys produced in 2018 by Company A?

- a) 66.66%
- b) 70%
- c) 33.33%
- d) 78%
- e) 75%

Direction (10-14): Read the following information carefully and answer the questions given below.

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The given table chart shows the average number of Maths and Science books, average number of Science and English books and the average number of English and Maths books available in four shops namely A, B, C and D.

Shops	Average number of Maths and Science books	Average number of Science and English books	Average number of English and Maths books
A	535	520	505
B	505	500	475
C	525	520	570
D	420	455	495

10) The price of each Maths book, Science book and English book in Shop C is Rs.550, Rs.600 and Rs.475 respectively. Find the total amount obtained by Shop C, while selling $\frac{11}{23}$ of the Maths books, $\frac{17}{19}$ of the science books and $\frac{3}{5}$ of the English books in Shop C.

- a) Rs.567125
- b) Rs.567350
- c) Rs.567400
- d) Rs.567275
- e) Rs.567200

11) The total number of books available in Shop E is 25% more than the average number of books available in Shop A and B together and the total number of maths books available in

Shop E is equal to the average number of maths books available in Shop A, B and C. Find the difference between the total number of English books available in Shop E and the total number of Science books available in Shop D, if the ratio of the total number of English books available in Shop E to the total number of Science books available in Shop E is 3:2.

- a) 445
- b) 178
- c) 280
- d) 825

e) 923

12) The average number of Economics books available from all shops together is 522 and the average number of Economics books available in Shop A, B, and C is 556. Find the total number of Economics books available in Shop B, if the total number of Economics books available in Shop A is 5 more than the total number of Science books available in Shop A and the total number of Economics books available in Shop C is 20% less than the total number of English books available in Shop C.

- a) 650
- b) 640
- c) 635

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- d) 628
- e) 661

13) The total number of Maths books available in Shop B is what percentage more/less than the average number of Science books available in Shop A and B?

- a) 35% less
- b) 28% more
- c) 38% less
- d) 11% more
- e) 40% less

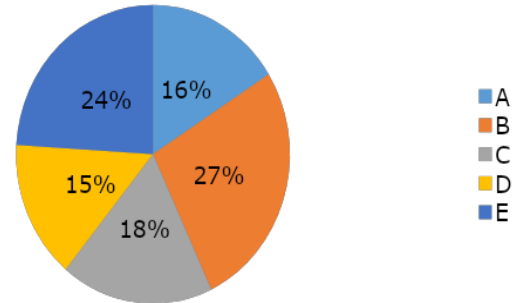
14) Find the ratio between the total number of English books available in Shop B and C to the total number of Science and Maths books available in Shop C.

- a) 51:58
- b) 69:70
- c) 71:72
- d) 74:75
- e) 32:33

Directions (15-19): Study the following information carefully and answer the questions.

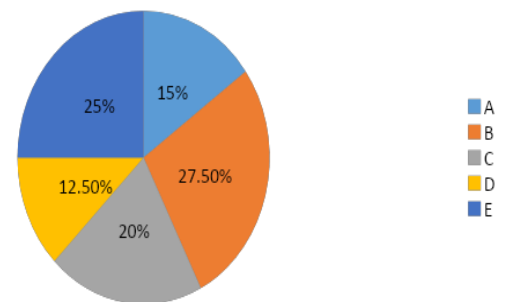
The given pie chart shows the percentage distribution of total number of people in five different villages i.e. A, B, C, D and E.

% distribution of total number of people in five different villages



The given pie chart shows the percentage distribution of the number of males in five different villages.

% distribution of number of males in five different villages



Note: Out of the total number of people in five different villages, 60% are males and the remaining 4800 are females.

15) Find the difference between the average number of males in villages A, C and E together and the average number of females in villages A, B and C together.

- a) 500
- b) 700
- c) 400

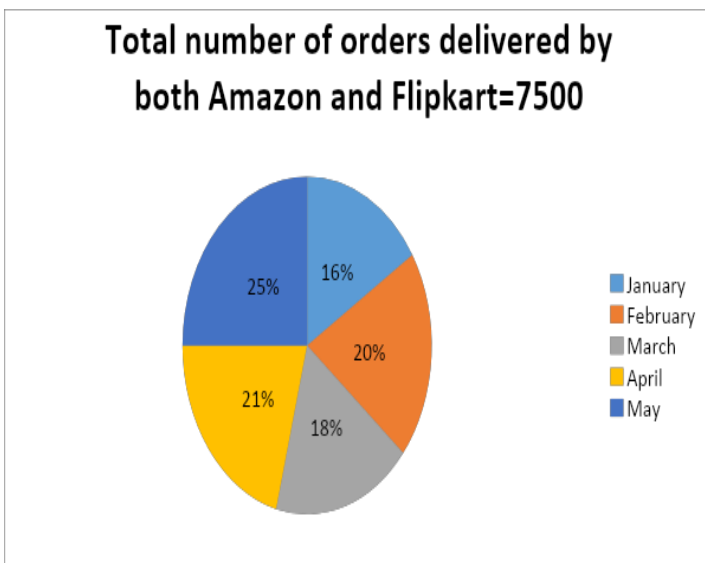
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- d) 300
e) 900
- 16) Ratio of number of employed to unemployed males in village A is 7:2 respectively and number of unemployed females in village C is 25% more than that of village A. If the average number of employed males and females in village A is 680 and the number of employed males in village C is 180 more than that of unemployed males, then find the number of employed people in village C.
- a) 1270
b) 1610
c) 1050
d) 1130
e) None of these
- 17) In village B, if the ratio of number of vaccinated to non-vaccinated males and females is 7:2 and 5:2 respectively, then the average number of vaccinated males and females is what percentage more than the number of non-vaccinated people?
- a) 62.5%
b) 37.5%
c) 52.5%
d) 17.5%
- e) None of these
- 18) Average number of males in villages D and F is equal to the number of males in village A and the number of females in village F is 16.67% less than the number of females in village B, then find the average number of people in villages B, D and F together?
- a) 2450
b) 2680
c) 2740
d) 2120
e) None of these
- 19) Number of literate people in village E is 1440 more than the number of illiterate people. If the number of literate males and females in village E is 11:7 respectively, then find the ratio of the number of illiterate females to males in village E.
- a) 4:5
b) 7:6
c) 1:2
d) 5:3
e) None of these

Directions (20-24): Study the following information carefully and answer the questions.

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The given pie chart shows the percentage distribution of total number of orders delivered by both Amazon and Flipkart in five different months i.e. January, February, March, April and May and also the table chart shows the ratio of number of orders delivered by Amazon and Flipkart in five different months.



Year	Ratio of number of orders delivered by Amazon and Flipkart
January	13:p
February	3:7
March	7:8
April	5:4
May	3:p

Note: p is a prime number and value is less than 17.

20) Ratio of the number of orders delivered by Amazon to Ajo in March is 7:5 respectively. If

the average number of orders delivered by Amazon, Flipkart and Ajo in March is (m+250), then which of the following statements is true?

- A) $(m/(7-p))=70$
- B) The number of orders delivered by Ajo in March is 290 less than the number of orders delivered by Flipkart in March.
- C) m is equal to half the number of orders delivered by Flipkart in April.

- a) All A, B and C are true
- b) Only A is true
- c) Only B is true
- d) Only A and C are true
- e) Only C is true

21) In April, the ratio of the number of orders delivered by Amazon is five times the number of orders Not delivered by Amazon and the number of orders not delivered in Flipkart is 28.56% out of the total number of orders delivered by Flipkart, then find the average number of orders received by Amazon and Flipkart together.

- a) 912
- b) 1362
- c) 154
- d) 975
- e) None of these

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22) Number of orders delivered by Amazon in February and March together is what percentage more than the average number of orders delivered by Flipkart in February and May together?

- a) 20%
- b) 60%
- c) 36%
- d) 55%
- e) None of these

23) Number of orders delivered by both Amazon and Flipkart in June is 24% more than that of February. If the number of orders delivered by Amazon in June is equal to the average number of orders delivered by Amazon in April and May together, then find the number of orders delivered by Flipkart in June.

- a) 650
- b) 860
- c) 700
- d) 570
- e) None of these

24) If the ratio of the number of orders delivered by Amazon in January for males to females is 8:5 respectively and the number of orders delivered by Amazon in March for males is 90

more than that of females, then find the number of orders delivered by Amazon in January and March for males.

- a) 1200
- b) 1800
- c) 1000
- d) 1600
- e) 1500

Directions (25-28): Read the following information carefully and answer the questions.

A certain quantity of dry fruits (almond, dates, and walnuts) are sold (in kg) in two different months i.e. March and April. In March, all dry fruits are sold for Rs.14000, the ratio of the quantity of almonds to walnuts sold in March is 5:6 and the cost price of almonds, dates and walnuts per kg is Rs.60, Rs.80, and Rs.70 respectively. The quantity of almonds sold in April is 40% less than that of March and the quantity of walnuts sold in March is 87.5% more than that of April. The ratio of the quantity of dates to walnuts sold in April is 3:2. The average quantity of almonds, dates and walnuts sold in April is 55 kg. In April, the marked price of dates is 40% more than the cost price and all the walnuts is sold for Rs.3600. The

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marked price of dates in April is equal to the cost price of walnuts in March and the cost price of almonds per kg in April is Rs.80.

25) If the marked price of the almonds per kg in April is 25% more than the cost price and the marked price of the walnuts in April is Rs.4800, then find the average marked price of the almonds, dates and walnuts per kg in April?

- a) Rs.90
- b) Rs.75
- c) Rs.100
- d) Rs.80
- e) None of these

26) If the quantity of almonds sold in May is 12% more than that of March, the ratio of the quantity of dates sold in March to May is 5:7 respectively and the quantity of walnuts sold in May is 25% more than the previous month. Then find the total quantity of dry fruits sold in May.

- a) 90 kg
- b) 150 kg
- c) 200 kg
- d) 110 kg
- e) None of these

27) In March, 60% of the dates are sold at 15% profit and the remaining dates are sold at 40%

profit, then find the overall profit obtained by selling dates.

- a) Ra.160
- b) Rs.100
- c) Rs.120
- d) Rs.800
- e) None of these

28) The quantity of cashews sold in both months is 33.33% more than the average quantity of almonds sold in March and April. If the ratio of the quantity of cashews sold in March to April is 2:3 respectively, then find the quantity of walnuts sold in April is how much more/less than the quantity of cashews sold in March.

- a) 33 more
- b) 16 more
- c) 11 less
- d) 42 more
- e) 25 less

Directions (29-31): Find out the wrong number in the following number series.

29) 210, 304, 364, 436, 520, 616

- a) 210
- b) 304
- c) 364
- d) 436

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e) 616

30) 512, 567, 502, 565, 492, 607

a) 512

b) 567

c) 565

d) 492

e) 607

31) 124, 64, 98, 256, 904, 4078

a) 124

b) 98

c) 256

d) 904

e) 4078

Direction (32-34): What will come in place of question mark (?) in the following questions.

32) $\sqrt{144}$ % of 1550 - 32^2 - 40% of 1500 = ? - 61^2

+ $\sqrt{324}$ % of 2100

a) 1905

b) 1985

c) 1885

d) 1920

e) 1938

33) ? - 14.28% of 378 + 36.36% of 429 -

83.33% of 540 = 23^3 - 49^2

a) 11100

b) 10150

c) 10124

d) 10114

e) 10155

34) $76^2 - 88^2 - \sqrt{(45^2 + 10^3)} = ? - 55\%$ of 1600 + 34^2

a) -2345

b) -2299

c) -2350

d) -2455

e) -2385

Directions (35-37): Following questions contain two statements as statement I

and statement II. You have to determine which statement/s is/are necessary

to answer the question and give answer as,

35) Find the sum of the perimeter of the rectangle and the perimeter of the square.

Statement I: The difference between the length of the rectangle and the side of the square is 20m.

Statement II: The ratio of the length of the rectangle to the breadth of the rectangle is 4:3 and the radius of the circle is 20% less than the sum of the length and the breadth of the rectangle.

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- a) The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- b) The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone is sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question
- e) The data given in both statements I and II together are necessary to answer the question.

36) Find the total time taken to complete the work, if P starts the work and leaves after 10 days, Q joins the work and leaves after some days and R works for the last 15 days.

Statement I: P and Q together can complete a work in $40/3$ days and Q and R together can complete the same work in 12 days.

Statement II: P and R can complete the same work in $120/7$ days.

- a) The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

- b) The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone is sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question
- e) The data given in both statements I and II together are necessary to answer the question.

37) Find the rate of interest at which A invests.

Statement I: A invests a certain amount Rs.x in Simple interest and Rs.x+1000 in compound interest and invests for the same number of years and at the same interest.

Statement II: B invests Rs.x in Simple interest at 15% per annum for 3 years and obtains an interest of Rs.6750 and A invests Rs.x+3000 at R% rate of interest at compound interest for 2 years and at the end of two years obtains a total amount of Rs.30420.

- a) The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

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- b) The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone is sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question
- e) The data given in both statements I and II together are necessary to answer the question.

38) The age A after 8 years is equal to the age of B after 12 years and the ratio of the age of B after 9 years to the age of C after 5 years is 5:11. 70% of the present age of C is equal to the average of the present age of D and E which is 35 years and the difference between the present age of D and E whose age is less than the former is 6 years. Find the difference between the average age of A, C, and E after 10 years and the average age of B and D before 8 years.

- a) 20 years
b) 30 years
c) 40 years
d) 35 years
e) 25 years

39) Pipe A and Pipe B can fill a tank in $200/13$ minutes and Pipe A alone can fill the tank in --- minutes. Pipe C and Pipe D are outlet pipes and both pipes can empty the tank in $100/7$ minutes and the ratio of the efficiency of Pipe C to Pipe D is 2:5. Pipe B and pipe D can fill/empty the tank in --- minutes.

- A) 50 minutes, 150 minutes
B) 40 minutes, 100 minutes
C) 20 minutes, $200/9$ minutes

- a) Only B
b) Only A and B
c) Only A
d) All A, B and C
e) Only B and C

40) Train A crosses a standing man in 15 seconds and the length of Train B is 300m more than the length of Train A. Train B crosses a pole in 35 sec and a bridge of length 450 m in 50 seconds. If the speed of the car is 20% more than the average speed of Train A and Train B, then find the distance travelled by car in 120 seconds.

- a) 4500 m
b) 4800 m
c) 5760 m
d) 4200 m

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e) 4950 m

41) Total number of cars produced in a plant is 30000 and four types of coloured cars are produced namely White, Black, Silver and Grey.

25% of the cars produced are in black colour.

Out of the remaining cars produced, 30% of the cars are produced in white colour and the ratio between the total number of white colour cars produced to the total number of grey cars produced is 30:41. Find the ratio between the total number of silver cars produced to the total number of white cars produced.

a) 31:33

b) 35:37

c) 39:41

d) 29:27

e) 29:30

42) The ratio of the base of the right-angled triangle to the height of the right angled triangle is 5:6 and the area of the right angled triangle is 735 m². The volume of the sphere is 38808 m³ and the height of the cylinder is 28.56% less than the height of the right angled triangle and the radius of the cylinder is 20% more than the height of the cylinder. Find the sum of the curved surface area of sphere and cylinder.

a) 3924π m²

b) 4024π m²

c) 3824π m²

d) 3624π m²

e) 3724π m²

Directions (43-45): Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them and give an answer as,

43)

Quantity I: The downstream speed of boat A is 10 km/hr more than the downstream speed of boat B. The sum of the downstream speed of boat A and upstream speed of boat B is 90 km/hr, then find the speed of boat B in still water if both travel in the same river.

Quantity II: The speed of boat A in still water is 40 km/hr more than the speed of the stream and the speed of boat B in still water is 30 km/hr more than the speed of the stream. If both boats travel in the same river, then find the average upstream speed of boats A and B?

a) Quantity I > Quantity II

b) Quantity I ≥ Quantity II

c) Quantity II > Quantity I

d) Quantity II ≥ Quantity I

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e) Quantity I = Quantity II (or) Relation cannot be established

44)

Quantity I: The shopkeeper had two jewel boxes for Rs.2250 for each. He sold one at 40% profit and another one at 16.67% loss and then find the overall profit/loss on his whole transaction?

Quantity II: Ratio of the marked price and the cost price of a printer is 8:5. If the shopkeeper gives a discount of Rs.2160 on the marked price and he gets the profit of 12%, then find the profit obtained by the printer?

- a) Quantity I > Quantity II
- b) Quantity I \geq Quantity II
- c) Quantity II > Quantity I
- d) Quantity II \geq Quantity I
- e) Quantity I = Quantity II or Relation cannot be established

45)

Quantity I: In bag A, 19 green balls, 11 yellow balls and some red balls. If the probability of selecting a red ball from bag A is $\frac{3}{5}$. Then the number of red balls in bag A is what percentage of the total number of balls?

Quantity II: In bag B, the average number of blue and black balls is 28. If 4 blue and 8 black

balls are added to bag B and the ratio of the number of blue balls to black balls in bag B becomes 9:8, then the number of black balls in bag B initially is what percentage of the number of blue balls in the same bag initially?

- a) Quantity I > Quantity II
- b) Quantity I \geq Quantity II
- c) Quantity II > Quantity I
- d) Quantity II \geq Quantity I
- e) Quantity I = Quantity II or Relation cannot be established

46) The average cost price of all products in an electric shop is Rs.____. If the cost of a fan and a bulb is increased by Rs.550 and Rs.290 respectively and the average becomes Rs.70 more, then the total number of products in an electric shop is ____.

- A) Rs.750, 12
- B) Rs.1200, 8
- C) Rs.510, 7
- a) Only A
- b) Only A and B
- c) Only C
- d) Only A and C
- e) All A, B and C

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47) The quantity of milk in glass A is 20% more than that of glass B and the ratio of the quantity of milk to water in glasses A and B is 9:2 and 5:2 respectively. The quantity of milk in glass C is equal to the average of the quantity of milk in glasses A and B. If the difference between the total quantity of glass A and B is 4 liters, then find the ratio of the average quantity of milk in glass A and glass B together to the quantity of water in glass B.

- a) 9:7
- b) 8:5
- c) 7:6
- d) 11:4
- e) None of these

48) Liam and Noah started a business with an investment of Rs.x and Rs.9000 respectively. After 16 months, Liam doubled his investment. After 4 more months, Noah withdrew 33(1/3)% of his investment. At the end of three years, the total profit of the business is Rs.8700 and the profit share of Noah is Rs.3450, then find the value of x.

- a) Rs.12000
- b) Rs.7500
- c) Rs.10800
- d) Rs.10000

e) None of these

49) Ratio of the monthly income of A to B is 12:7 and the monthly income of A is 25% more than that of C. Ratio of the savings of A to B is 15:11 and the expenditure of A is Rs.13500. If the difference between the monthly income of B and C is Rs.3900, then the expenditure of B is what percentage of the monthly income of C?

- a) 50%
- b) 36%
- c) 10%
- d) 25%
- e) None of these

50) Vani invested Rs.P in a simple interest at the rate of 15% per annum for 7 years. Gokila invested Rs.15000 in a compound interest at the rate of 1st year is 20%, 2nd year is 10% and 3rd year is 15%. If the total interest received by Gokila and Vani is equal, then find the value of P.

- a) Rs.9100
- b) Rs.6500
- c) Rs.7400
- d) Rs.8800
- e) None of these

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Answer With Explanation

Directions (1-4):

The total number of passengers travelling in Bus A = 24

The total number of passengers travelling in Bus A in round 1 = 9

The total number of passengers travelling in Bus A in round 2 & round 3 = $24 - 9 = 15$

The ratio of the total number of passengers travelling in round 2 by Bus A to B is 4:3.

Let the total number of passengers travelling in round 2 by Bus A be $4x$

Let the total number of passengers travelling in round 2 by Bus B be $3x$

If $x=1$ then the total number of passengers travelling in round 2 by Bus A is 4 and the total number of passengers travelling in round 2 by Bus B is 3, but it does not satisfy the given condition that Sum of the total number of passengers in round 1 from both Bus A and B is equal to the sum of the total number of passengers in round 2 from both Bus A and B.

So, $x=1$ is not possible.

If $x=2$ then the total number of passengers travelling in round 2 by Bus A is 8 and the total number of passengers travelling in round 2 by Bus B is 6 and this value satisfies the given condition.

If $x=3$ then the total number of passengers travelling in round 2 by Bus A is 12 and the total number of passengers travelling in round 2 by Bus B is 9 and this value does not satisfy the given condition.

The total number of passengers travelling in Bus A in round 2 = 8

The total number of passengers travelling in Bus A in round 3 = $15 - 8 = 7$

The sum of the total number of passengers in round 2 from both Bus A and B = $8 + 6 = 14$

The sum of the total number of passengers in round 1 from Bus B = $14 - 9 = 5$

The sum of the total number of passengers in round 3 from Bus B = 6 (as the total number of passengers in any two rounds is same)

Bus	Round 1	Round 2	Round 3
A	9	8	7
B	5	6	6

1. Answer: B

The price of a ticket for each passenger in round 1 for return journey = $100 - 100 \times 25 / 100 = 100 - 25 = 75$

The price of a ticket for each passenger in round 2 for return journey = $320 - 320 \times 25 / 100 = 320 - 80 = 240$

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The price of a ticket for each passenger in round 3 for return journey = $280 - 280 \times 25/100 = 280 - 70 = 210$

Revenue obtained by Bus A in round 1 = $(9 \times 100) + (9 \times 75) = \text{Rs.} 1575$

Revenue obtained by Bus B in round 2 = $(6 \times 320) + (6 \times 240) = \text{Rs.} 3360$

Revenue obtained by Bus A in round 3 = $(7 \times 280) + (7 \times 210) = \text{Rs.} 3430$

Total revenue = $1575 + 3360 + 3430 = \text{Rs.} 8365$

2. Answer: D

The total number of passengers in round 1 from Bus A paying through offline mode = $9 - (9 \times 33.33/100) = 6$

The total number of passengers in round 2 from Bus A paying through offline mode = $8 - (8 \times 25/100) = 6$

The total number of passengers in round 3 from Bus A paying through offline mode = $7 - (7 \times 42.85/100) = 7 - (7 \times 3/7) = 4$

The total number of passengers in round 1 from Bus B paying through online mode = $5 - (5 \times 2/5) = 3$

The total number of passengers in round 2 from Bus B paying through online mode = $6 - (6 \times 1/3) = 4$

The total number of passengers in round 3 from Bus B paying through online mode = $6 - (6 \times 1/2) = 3$

Required total = $6 + 6 + 4 + 3 + 4 + 3 = 26$

3. Answer: A

Required ratio = $(9 + 5) : (6 + 6) = 7 : 6$

4. Answer: C

The total number of passengers travelling in Bus C in round 1 = $5 - (5 \times 20/100) = 4$

The ratio of total number of passengers travelling in Bus C all round together = 18

The total number of travelling passengers in Bus C in round 2 and round 3 = $18 - 4 = 14$

Directions (5-9):

Total number of toys produced in 2018 and 2019 in Company L = $1420 \times 2 = 2840$

Total number of toys produced in 2018 in Company L = 1300

Total number of toys produced in 2019 in Company L = $2840 - 1300 = 1540$

Total number of toys produced in 2018 and 2019 in Company M = $1390 \times 2 = 2780$

Total number of toys produced in 2018 in Company M = 1530

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Total number of toys produced in 2019 in

$$\text{Company M} = 2780 - 1530 = 1250$$

Total number of toys produced in 2018 and 2019

$$\text{in Company N} = 1510 * 2 = 3020$$

Total number of toys produced in 2018 in

$$\text{Company N} = 1600$$

Total number of toys produced in 2019 in

$$\text{Company N} = 3020 - 1600 = 1420$$

Total number of toys produced in 2018 and 2019

$$\text{in Company O} = 1370 * 2 = 2740$$

Total number of toys produced in 2018 in

$$\text{Company O} = 1250$$

Total number of toys produced in 2019 in

$$\text{Company O} = 2740 - 1250 = 1490$$

Total number of toys sold in 2018 = 3440

$$x - 275 + x + (x/2) + x - 765 = 3440$$

$$x = 1280$$

Total number of toys sold in 2018 in Company L

$$= x - 275 = 1280 - 275 = 1005$$

Total number of toys unsold in 2018 in Company

$$\text{L} = 1300 - 1005 = 295$$

Total number of toys sold in 2018 in Company M

$$= x = 1280$$

Total number of toys unsold in 2018 in Company

$$\text{M} = 1530 - 1280 = 250$$

Total number of toys sold in 2018 in Company N

$$= x/2 = 1280/2 = 640$$

Total number of toys unsold in 2018 in Company

$$\text{N} = 1600 - 640 = 960$$

Total number of toys sold in 2018 in Company O

$$= x - 765 = 1280 - 765 = 515$$

Total number of toys unsold in 2018 in Company

$$\text{O} = 1250 - 515 = 735$$

Total number of toys sold in 2019 = y

$$(y/3) + (y/5) + ((y/5) + 250) + ((y/3) - 462) = y$$

$$y = 3180$$

Total number of toys sold in 2019 in Company L

$$= y/3 = 3180/3 = 1060$$

Total number of toys unsold in 2019 in Company

$$\text{L} = 1540 - 1060 = 480$$

Total number of toys sold in 2019 in Company M

$$= y/5 = 3180/5 = 636$$

Total number of toys unsold in 2019 in Company

$$\text{M} = 1250 - 636 = 614$$

Total number of toys sold in 2019 in Company N

$$= (y/5) + 250 = 636 + 250 = 886$$

Total number of toys unsold in 2019 in Company

$$\text{N} = 1420 - 886 = 534$$

Total number of toys sold in 2019 in Company O

$$= (y/3) - 462 = 1060 - 462 = 598$$

Total number of toys unsold in 2019 in Company

$$\text{O} = 1490 - 598 = 892$$

5. Answer: A

The average number of toys produced in 2019
by Company M and

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Company N

$$= (1250+1420)/2 = 1335$$

The total number of toys produced in 2020 by

Company M

$$= 1335+1335*33.33/100 = 1780$$

The total number of toys sold in 2020 by

Company M

$$= (x/5)+(y/4) = (1280/5)+(3180/4) = 256+795 = 1051$$

The total number of toys unsold in 2020 in

$$\text{Company M} = 1780-1051 = 729$$

6. Answer: E

The total number of unsold toys in 2018 from all companies together

$$= 295+250+960+735 = 2240$$

The total number of unsold toys in 2019 from all companies together

$$= 480+614+534+892 = 2520$$

$$\text{Required difference} = 2520-2240 = 280$$

7. Answer: C

Defective toys sold by Company L in 2019 =

$$1060*25/100 = 265$$

Non-Defective toys sold by Company L in 2019

$$= 1060-265 = 795$$

Defective toys sold by Company M in 2019 =

$$636*33.33/100 = 212$$

Non-Defective toys sold by Company M in 2019

$$= 636-212 = 424$$

Defective toys sold by Company N in 2019 =

$$886*1/2 = 443$$

Non-Defective toys sold by Company N in 2019

$$= 886-443 = 443$$

Defective toys sold by Company O in 2019 =

$$598*5/13 = 230$$

Non-Defective toys sold by Company O in 2019

$$= 598-230 = 368$$

The average number of toys that are sold is non-defective in 2018 from

$$\text{all companies together} = (795+424+443+368)/4 = 507.5$$

8. Answer: A

Total amount acquired when selling the toys in original price in 2018 by Company M

$$= 1280*200 = \text{Rs.}256000$$

Total amount acquired when selling the toys in original price in 2019 by Company M

$$= 636*275 = \text{Rs.}174900$$

Reduced amount while selling the toys in 2018 =

$$200-(200*25/100) = \text{Rs.}150$$

Reduced amount while selling the toys in 2019 =

$$275-(275*27.27/100)$$

$$= 275-(275*3/11) = 200$$

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Total amount acquired when selling the toys in reduced price in 2018 by Company M

$$= 250 \times 150 = \text{Rs.}37500$$

Total amount acquired when selling the toys in reduced price in 2019 by Company M

$$= 614 \times 200 = \text{Rs.}122800$$

The total amount acquired while selling the toys in 2018 and 2019 by Company M

$$= 256000 + 174900 + 37500 + 122800 = \text{Rs.}591200$$

9. Answer: A

The total number of toys produced by Company A in 2018 and 2019 = $1300 + 1250 = 2550$

The total number of toys produced in 2018 by Company A is 60% of the total number of toys produced in 2018 and 2019 by Company A

The total number of toys produced in 2018 by Company A = $60x$

The total number of toys produced in 2019 by Company A = $40x$

$$100x = 2550$$

$$x = 25.5$$

The total number of toys produced in 2018 by Company A = $60x = 1530$

The total number of toys produced in 2019 by Company A = $40x = 1020$

$$\text{Required percentage} = \frac{1020}{1530} \times 100 = 66.66\%$$

Direction (10-14):

Shop A

Average number of Maths and Science books available = 535

Total number of Maths and Science books available = $535 \times 2 = 1070$

Average number of Science and English books available = 520

Total number of Science and English books available = $520 \times 2 = 1040$

Average number of English and Maths books available = 505

Total number of English and Maths books available = $505 \times 2 = 1010$

Total number of Maths, Science and English = $(1070 + 1040 + 1010) / 2 = 1560$

Total number of Maths books available = $1560 - 1040 = 520$

Total number of Science books available = $1560 - 1010 = 550$

Total number of English books available = $1560 - 1070 = 490$

Shop B

Average number of Maths and Science books available = 505

Total number of Maths and Science books available = $505 \times 2 = 1010$

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Average number of Science and English books available = 500

Total number of Science and English books available = $500 \times 2 = 1000$

Average number of English and Maths books available = 475

Total number of English and Maths books available = $475 \times 2 = 950$

Total number of Maths, Science and English = $(1010 + 1000 + 950) / 2 = 1480$

Total number of Maths books available = $1480 - 1000 = 480$

Total number of Science books available = $1480 - 950 = 530$

Total number of English books available = $1480 - 1010 = 470$

Shop C

Average number of Maths and Science books available = 525

Total number of Maths and Science books available = $525 \times 2 = 1050$

Average number of Science and English books available = 520

Total number of Science and English books available = $520 \times 2 = 1040$

Average number of English and Maths books available = 570

Total number of English and Maths books available = $570 \times 2 = 1140$

Total number of Maths, Science and English = $(1050 + 1040 + 1140) / 2 = 1615$

Total number of Maths books available = $1615 - 1040 = 575$

Total number of Science books available = $1615 - 1140 = 475$

Total number of English books available = $1615 - 1050 = 565$

Shop D

Average number of Maths and Science books available = 420

Total number of Maths and Science books available = $420 \times 2 = 840$

Average number of Science and English books available = 455

Total number of Science and English books available = $455 \times 2 = 910$

Average number of English and Maths books available = 495

Total number of English and Maths books available = $495 \times 2 = 990$

Total number of Maths, Science and English = $(840 + 910 + 990) / 2 = 1370$

Total number of Maths books available = $1370 - 910 = 460$

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Total number of Science books available =

$$1370 - 990 = 380$$

Total number of English books available = 1370 -

$$840 = 530$$

Shops	Total books	Maths books	Science books	English books
A	1560	520	550	490
B	1480	480	530	470
C	1615	575	475	565
D	1370	460	380	530

10. Answer: D

Total number of Maths books sold by Shop C =

$$575 \times \frac{11}{23} = 275$$

Total cost obtained by selling Maths books by

$$\text{Shop C} = 275 \times 550 = \text{Rs. } 151250$$

Total number of Science books sold by Shop C

$$= 475 \times \frac{17}{19} = 425$$

Total cost obtained by selling Science books by

$$\text{Shop C} = 425 \times 600 = \text{Rs. } 255000$$

Total number of English books sold by Shop C =

$$565 \times \frac{3}{5} = 339$$

Total cost obtained by selling English books by

$$\text{Shop C} = 339 \times 475 = \text{Rs. } 161025$$

Total cost obtained by Shop C =

$$151250 + 255000 + 161025 = \text{Rs. } 567275$$

11. Answer: A

The average number of books available in Shop

$$\text{A and B} = \frac{1560 + 1480}{2} = 1520$$

The total number of books available in Shop E =

$$1520 + 1520 \times \frac{25}{100} = 1900$$

The average number of maths books available

$$\text{in Shop A, B and C} = \frac{520 + 480 + 575}{3} = 525$$

The total number of Maths books available in

$$\text{Shop E} = 525$$

The total number of Science and English books

$$\text{available in Shop E} = 1900 - 525 = 1375$$

The total number of Science books available in

$$\text{Shop E} = 1375 \times \frac{2}{5} = 550$$

The total number of English books available in

$$\text{Shop E} = 1375 \times \frac{2}{5} = 825$$

$$\text{Required difference} = 825 - 380 = 445$$

12. Answer: E

The average number of Economics books

$$\text{available from all shops together} = 522$$

The total number of Economics books available

$$\text{from all shops together} =$$

$$522 \times 4 = 2088$$

The average number of Economics books

$$\text{available in Shop A, B, and C} = 556$$

The total number of Economics books available

$$\text{in Shop A, B, and C} = 556 \times 3 = 1668$$

The total number of Economics books available

$$\text{in Shop D} = 2088 - 1668 = 420$$

The total number of Economics books available

$$\text{in Shop A} = 550 + 5 = 555$$

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The total number of Economics books available in Shop C = $565 - 565 \times 20/100 = 452$

The total number of Economics books available in Shop B = $1668 - (555 + 452) = 661$

13. Answer: D

The average number of Science books available in Shop A and B = $(550 + 530)/2 = 540$

Required percentage = $(540 - 480)/480 \times 100 = 11\%$ more

14. Answer: B

Required ratio = $(470 + 565):(575 + 475) = 207:210 = 69:70$

Directions (15-19):

Total number of people in five different villages = $4800 \times 100/40 = 12000$

Number of males in five different villages = $12000 - 4800 = 7200$

Total number of people in village A = $12000 \times 16/100 = 1920$

Number of males in village A = $7200 \times 15/100 = 1080$

Number of females in village A = $1920 - 1080 = 840$

Total number of people in village B = $12000 \times 27/100 = 3240$

Number of males in village B = $7200 \times 27.5/100 = 1980$

Number of females in village B = $3240 - 1980 = 1260$

Total number of people in village C = $12000 \times 18/100 = 2160$

Number of males in village C = $7200 \times 20/100 = 1440$

Number of females in village C = $2160 - 1440 = 720$

Total number of people in village D = $12000 \times 15/100 = 1800$

Number of males in village D = $7200 \times 12.5/100 = 900$

Number of females in village D = $1800 - 900 = 900$

Total number of people in village E = $12000 \times 24/100 = 2880$

Number of males in village E = $7200 \times 25/100 = 1800$

Number of females in village E = $2880 - 1800 = 1080$

Village	Total number of people	Number of males	Number of females
A	1920	1080	840
B	3240	1980	1260
C	2160	1440	720
D	1800	900	900
E	2880	1800	1080

15. Answer: A

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The average number of males in villages A, C and E = $(1080 + 1440 + 1800) / 3 = 1440$

The average number of females in villages A, B and C = $(840 + 1260 + 720) / 3 = 940$

Required difference = $1440 - 940 = 500$

16. Answer: D

Number of unemployed males in village

$$A = 1080 * 2 / 9 = 240$$

Number of employed people in village

$$A = 680 * 2 = 1360$$

Number of unemployed people in village

$$A = 1920 - 1360 = 560$$

Number of unemployed females in village

$$A = 560 - 240 = 320$$

Number of unemployed females in village

$$C = 320 * 125 / 100 = 400$$

Number of employed females in village C = $720 -$

$$400 = 320$$

Number of employed males in village C = x

Number of unemployed males in village C = y

$$x + y = 1440$$

$$x - y = 180$$

$$x = 810$$

$$y = 630$$

Number of employed people in village

$$C = 810 + 320 = 1130$$

17. Answer: C

Number of vaccinated males in village

$$B = 1980 * 7 / (7 + 2) = 1540$$

Number of non-vaccinated males in village

$$B = 1980 - 1540 = 440$$

Number of vaccinated females in village

$$B = 1260 * 5 / (5 + 2) = 900$$

Number of non-vaccinated females in village

$$B = 1260 - 900 = 360$$

The average number of vaccinated males and females in village B = $(1540 + 900) / 2 = 1220$

Number of non-vaccinated people in village

$$B = 440 + 360 = 800$$

Required percentage = $(1220 - 800) / 800 * 100 = 52.5\%$

18. Answer: A

Number of males in villages D and

$$F = 1080 * 2 = 2160$$

Number of males in village F = $2160 - 900 = 1260$

Number of females in village F = 83.33% of $1260 = 1260 * 5 / 6 = 1050$

Total number of people in village

$$F = 1260 + 1050 = 2310$$

Required average = $(3240 + 1800 + 2310) / 3 = 2450$

19. Answer: C

Number of literate people in village E = a

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Number of illiterate people in village $E=b$

$$a+b=2880$$

$$a-b=1440$$

$$a=2160$$

Number of literate males in village

$$E=2160 \times \frac{11}{(11+7)}=1320$$

Number of illiterate males in village $E=1800-$

$$1320=480$$

Number of literate females in village $E=2160-$

$$1320=840$$

Number of illiterate females in village $E=1080-$

$$840=240$$

$$\text{Required ratio}=240:480=1:2$$

Directions (20-24):

Total number of orders delivered by both

Amazon and Flipkart in January

$$=7500 \times \frac{16}{100}=1200$$

Total number of orders delivered by both

Amazon and Flipkart in February

$$=7500 \times \frac{20}{100}=1500$$

Total number of orders delivered by both

Amazon and Flipkart in

$$\text{March}=7500 \times \frac{18}{100}=1350$$

Total number of orders delivered by both

Amazon and Flipkart in April $=7500 \times \frac{21}{100}=1575$

Total number of orders delivered by both

Amazon and Flipkart in May $=7500 \times \frac{25}{100}=1875$

Number of orders delivered by Amazon in

$$\text{February}=1500 \times \frac{3}{(3+7)}=450$$

Number of orders delivered by Flipkart in

$$\text{February}=1500-450=1050$$

Number of orders delivered by Amazon in

$$\text{March}=1350 \times \frac{7}{(7+8)}=630$$

Number of orders delivered by Flipkart in

$$\text{March}=1350-630=720$$

Number of orders delivered by Amazon in

$$\text{April}=1575 \times \frac{5}{(5+4)}=875$$

Number of orders delivered by Flipkart in

$$\text{April}=1575-875=700$$

Possible values of p is 2, 3, 5, 7, 11, 13

$$p=2 \Rightarrow$$

Number of orders delivered by Amazon in

$$\text{January}=1200 \times \frac{13}{(13+2)}=1040$$

Number of orders delivered by Flipkart in

$$\text{January}=1200-1040=160$$

Number of orders delivered by Amazon in

$$\text{May}=1875 \times \frac{3}{(3+2)}=1125$$

Number of orders delivered by Flipkart in

$$\text{May}=1875-1125=750$$

$$p=3 \Rightarrow$$

Ratio of number of orders delivered by Amazon and Flipkart in May $=3:3$ (not possible)

$$p=5 \Rightarrow$$

Number of orders delivered by Amazon in

$$\text{January}=1200 \times \frac{13}{(13+5)}=866.67 \text{ (not possible)}$$

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$p=7 \Rightarrow$

Number of orders delivered by Flipkart in

May = $1875 \times 3 / (3+7) = 562.5$ (not

possible)

$P=11 \Rightarrow$

Number of orders delivered by Flipkart in

May = $1875 \times 3 / (3+11) = 401.78$ (not possible)

$p=13 \Rightarrow$

Number of orders delivered by Flipkart in

May = $1875 \times 3 / (3+13) = 351.56$ (not possible)

Month	Total number of orders delivered by both Amazon and Flipkart	Number of orders delivered by Amazon	Number of orders delivered by Flipkart
January	1200	1040	160
February	1500	450	1050
March	1350	630	720
April	1575	875	700
May	1875	1125	750

20. Answer: D

$P=2$

Number of orders delivered by Ajo in

March = $630 \times 5 / 7 = 450$

$M+250 = (630+720+450)/3$

$m=600-250$

$m=350$

From option (A)

$(350/7-2)=70$

$70=70$

This satisfied the given condition.

From option (B)

Number of orders delivered by Ajo in March is 270 less than the number of orders delivered by Flipkart in March.

This does not satisfy the given condition.

From option (C)

$m=350$

Half of number of orders delivered by Flipkart in

April = $700/2 = 350$

This satisfied the given condition.

21. Answer: D

Number of order not delivered in Amazon in

April = $875 \times 1/5 = 175$

Total number of orders received by Amazon in

April = $175 + 875 = 1050$

Number of order not delivered in flipkart in April = 200

Total number of orders received by Flipkart in

April = 900

Required average = $(1050+900)/2 = 975$

22. Answer: A

The average number of orders delivered by

Flipkart in February and May = $(1050+750)/2 = 900$

Number of orders delivered by Amazon in

February and March = $450+630 = 1080$

Required percentage = $(1080-900)/900 \times 100 = 20\%$

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23. Answer: B

Total number of orders delivered by both Amazon and Flipkart in June
 $=1500 \times 124 / 100 = 1860$

The average number of orders delivered by Amazon in April and May $= (875 + 1125) / 2 = 1000$

Number of orders delivered by Flipkart in June $= 1860 - 1000 = 860$

24. Answer: C

Number of orders delivered by Amazon in January for males $= 1040 \times 8 / (8 + 5) = 640$

Number of orders delivered by Amazon in March for males $= a$

Number of orders delivered by Amazon in March for females $= b$

$$a + b = 630$$

$$a - b = 90$$

$$a = 360$$

$$b = 270$$

$$\text{Required sum} = 640 + 360 = 1000$$

Directions (25-28):

The quantity of almonds sold in March $= 5x$ kg

The quantity of walnuts sold in March $= 6x$ kg

The quantity of almonds sold in

$$\text{April} = 5x \times 60 / 100 = 3x \text{ kg}$$

The quantity of walnuts sold in

$$\text{April} = 6x \times 100 / 187.5 = 6x \times 8 / 15 = 3.2x \text{ kg}$$

The quantity of dates sold in April $= 3.2x \times 3 / 2 = 4.8x$ kg

$$3x + 3.2x + 4.8x = 55 \times 3$$

$$x = 165 / 11$$

$$x = 15$$

The quantity of almonds sold in April $= 3 \times 15 = 45$ kg

The quantity of dates sold in April $= 4.8 \times 15 = 72$ kg

The quantity of walnuts sold in April $= 3.2 \times 15 = 48$ kg

The quantity of almonds sold in March $= 5 \times 15 = 75$ kg

The quantity of walnuts sold in March $= 6 \times 15 = 90$ kg

The quantity of dates sold in March $= d$ kg

$$75 \times 60 + d \times 80 + 90 \times 70 = 14000$$

$$d \times 80 = 3200$$

$$d = 40 \text{ kg}$$

The marked price of dates per kg in April $= \text{Rs. } 70$

The cost price of dates per kg in

$$\text{April} = 70 \times 100 / 140 = \text{Rs. } 50$$

The cost price of almonds per kg in April $= \text{Rs. } 80$

The cost price of walnuts per kg in

$$\text{April} = 3600 / 48 = \text{Rs. } 75$$

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Dry Fruits	March		April	
	Quantity (in kg)	Cost price per kg (in Rs.)	Quantity (in kg)	Cost price per kg (in Rs.)
Almonds	75	60	45	80
Dates	40	80	72	50
Walnuts	90	70	48	75

25. Answer: A

The marked price of dates per kg in April=Rs.70

The marked price of almonds per kg in

April= $80 \times 125 / 100 = \text{Rs. } 100$

The marked price of walnuts per kg in

April= $4800 / 48 = \text{Rs. } 100$

Required average= $(70+100+100) / 3 = \text{Rs. } 90$

26. Answer: C

The quantity of almonds sold in

May= $75 \times 112 / 100 = 84 \text{ kg}$

The quantity of dates sold in May= $40 \times 7 / 5 = 56 \text{ kg}$

The quantity of walnuts sold in

May= $48 \times 125 / 100 = 60 \text{ kg}$

Required total= $84+56+60=200 \text{ kg}$

27. Answer: D

60% of the dates sold in March= $40 \times 60 / 100 = 24 \text{ kg}$

40% of the dates sold in March= $40 \times 40 / 100 = 16 \text{ kg}$

Overall profit= $24 \times 80 \times 115 / 100 + 16 \times 80 \times 140 / 100 -$

$40 \times 80 = 4000 -$

$3200 = \text{Rs. } 800$

28. Answer: B

The average quantity of almonds in March and April= $(75+45) / 2 = 60 \text{ kg}$

The quantity of cashews sold in both

months= $60 \times 133.33 / 100 = 60 \times 4 / 3 = 80 \text{ kg}$

The quantity of cashews sold in

March= $80 \times 2 / (2+3) = 32 \text{ kg}$

Required difference= $48-32=16 \text{ more}$

29. Answer: A

$256 + (40 \times 1.2) = 304$

$304 + (40 \times 1.5) = 364$

$364 + (40 \times 1.8) = 436$

$436 + (40 \times 2.1) = 520$

$520 + (40 \times 2.4) = 616$

30. Answer: C

$512 + 11 \times 5 = 567$

$567 - 13 \times 5 = 502$

$502 + 17 \times 5 = 587$

$587 - 19 \times 5 = 492$

$492 + 23 \times 5 = 607$

31. Answer: B

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$$124 \times 0.5 + 2 = 64$$

$$64 \times 1.5 + 4 = 100$$

$$100 \times 2.5 + 6 = 256$$

$$256 \times 3.5 + 8 = 904$$

$$904 \times 4.5 + 10 = 4078$$

32. Answer: A

$$\sqrt{144} \% \text{ of } 1550 - 32^2 - 40\% \text{ of } 1500 = ? - 61^2 +$$

$$\sqrt{324} \% \text{ of } 2100$$

$$12/100 * 1550 - 1024 - 40/100 * 1500 = ? -$$

$$3721 + 18/100 * 2100$$

$$186 - 1024 - 600 = ? - 3721 + 378$$

$$? = 1905$$

33. Answer: D

$$? - 14.28\% \text{ of } 378 + 36.36\% \text{ of } 429 - 83.33\% \text{ of}$$

$$540 = 23^3 - 49^2$$

$$? - 1/7 * 378 + 4/11 * 429 - 5/6 * 540 = 12167 -$$

$$2401$$

$$? - 54 + 4 * 39 - 5 * 90 = 12167 - 2401$$

$$? = 10114$$

34. Answer: B

$$76^2 - 88^2 - \sqrt{(45^2 + 10^3)} = ? - 55\% \text{ of } 1600 + 34^2$$

$$5776 - 7744 - \sqrt{(2025 + 1000)} = ? - 55 * 16 + 1156$$

$$? = -2299$$

35. Answer: D

From statement I,

The difference the length of the rectangle and the side of the square is 20m

So, statement I alone is not sufficient to answer the question.

From statement II,

Length of the rectangle = $4x$

Breadth of the rectangle = $3x$

Radius of the circle = $7x - (7x * 20/100) = 28x/35$

So, statement II alone is not sufficient to answer the question.

36. Answer: E

From statement I,

$$(1/P) + (1/Q) = 3/40$$

$$(1/Q) + (1/R) = 1/12$$

So, statement I alone is not sufficient to answer the question.

From statement II,

$$(1/R) + (1/P) = 7/120$$

So, statement II alone is not sufficient to answer the question.

From I and II,

$$2((1/P) + (1/Q) + (1/R)) = (3/40) + (1/12) + (7/120)$$

$$(1/P) + (1/Q) + (1/R) = 13/120$$

$$1/P = 13/120 - 1/12 = 1/40, P \text{ alone} = 40 \text{ days}$$

$$1/Q = 13/120 - 7/120 = 1/20, Q \text{ alone} = 20 \text{ days}$$

$$1/R = 13/120 - 3/40 = 1/30, R \text{ alone} = 30 \text{ days}$$

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Total efficiency = 120 works

Efficiency of P alone = 3

Efficiency of Q alone = 6

Efficiency of R alone = 4

P's work done = $3 \times 10 = 30$

Remaining work = $120 - 30 = 90$

R's work done = $4 \times 15 = 60$

Remaining work = $90 - 60 = 30$

Q works for = $30/6 = 5$ days

Total time taken = $10 + 5 + 15 = 30$ days

37. Answer: B

From statement I,

Investment years = n years

Rate of interest = R%

S.I principle = Rs.x

C.I principle = Rs.x+1000

So, statement I alone is not sufficient to answer the question.

From statement II,

$(x \times 15 \times 3)/100 = 6750$

x = Rs.15000

x+3000 = Rs.18000

Interest received by A = $30420 - 18000 = 12420$

$18000((1+(R/100)^2 - 1) = 12420$

R = 30%

So, statement II alone is sufficient to answer the question.

38. Answer: E

Average age of D and E = 70

D+E = 70

D-E = 6

Present age of D = 38 years

Present age of E = 32 years

Present age of C = $35 \times 70/100 = 50$ years

Age of C after 5 years = 55 years

The age of B after 9 years = $5 \times 55/11 = 25$ years

Present age of B = 16 years

Age of B after 12 years = 28 years

Present age of A = 20 years

Age of A after 10 years = $20 + 10 = 30$ years

Age of C after 10 years = $50 + 10 = 60$ years

Age of E after 10 years = $32 + 10 = 42$ years

Age of B before 8 years = $16 - 8 = 8$ years

Age of D before 8 years = $38 - 8 = 30$ years

Required difference = $(30 + 60 + 42)/3 - (8 + 30)/2 = 25$ years

39. Answer: A

From Option (B),

$(1/A) + (1/B) = 13/200$

$(1/40) + (1/B) = 13/200$

$(1/B) = 1/25$

The ratio of the efficiency of Pipe C to Pipe D is 2:5

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$$(1/5x)+(1/2x) = 7/100$$

$$(1/x) = (1/10)$$

C can empty the tank in 50 minutes

D can empty the tank in 20 minutes

$$(1/D)-(1/B) = (1/20)-(1/25) = 1/100$$

Tank emptied in 100 minutes

This is satisfied

From Option (A),

$$(1/A)+(1/B) = 13/200$$

$$(1/50)+(1/B) = 13/200$$

$$(1/B) = 9/200$$

The ratio of the efficiency of Pipe C and Pipe D is 2:5

$$(1/5x)+(1/2x) = 7/100$$

$$(1/x) = (1/10)$$

C can empty the tank in 50 minutes

D can empty the tank in 20 minutes

$$(1/D)-(1/B) = 1/20 - (9/200) = 1/200$$

This is not satisfied

From Option (C),

$$(1/A)+(1/B) = 13/200$$

$$(1/20)+(1/B) = 13/200$$

$$(1/B) = 3/200$$

The ratio of the efficiency of Pipe C and Pipe D is 2:5

$$(1/5x)+(1/2x) = 7/100$$

$$(1/x) = (1/10)$$

C can empty the tank in 50 minutes

D can empty the tank in 20 minutes

$$(1/D)-(1/B) = (1/20)-(3/200) = 7/200$$

This is not satisfied.

40. Answer: C

Length of Train A = $x-300$

Length of Train B = x

Train B crosses a pole in 35 sec and a bridge of length 450 m in 50 seconds

$$x/35 = (x+450)/50$$

$$x=1050 \text{ m}$$

Length of Train B = $x = 1050\text{m}$

Length of Train A = $1050-300 = 750 \text{ m}$

Speed of the Train B = $1050/35 = 30\text{m/s}$

Speed of Train A = $750/15 = 50\text{m/s}$

Speed of car = $(50+30)/2 * 120/100 = 48\text{m/s}$

Total distance covered by car = $48*120 = 5760\text{m}$

41. Answer: E

The total number of cars produced in a plant = 30000

The total number of black cars produced in a plant = $30000*25/100 = 7500$

The total number of (white+silver+grey) cars produced in a plant

$$= 30000-7500 = 22500$$

The total number of white cars produced in a plant = $22500*30/100 = 6750$

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The total number of (silver+grey) cars produced in a plant = $22500 - 6750 = 15750$

The total number of grey cars produced in a plant = $6750 \times \frac{41}{30} = 9225$

The total number of silver cars produced in a plant = $15750 - 9225 = 6525$

Required ratio = $6525:6750 = 29:30$

42. Answer: A

Base of the right angled triangle = $5x$

Height of the right angled triangle = $6x$

$$\frac{1}{2} * b * h = 735$$

$$\frac{1}{2} * 5x * 6x = 735$$

$$x = 7m$$

Base of the right angled triangle = $5 * 7 = 35m$

Height of the right angled triangle = $6 * 7 = 42m$

Volume of the sphere = 38808

$$\frac{4}{3} * \pi * r^3 = 38808$$

Radius of the sphere = 21m

Height of the cylinder = $42 - 42 \left(\frac{28.56}{100} \right) = 30m$

Radius of the cylinder = $30 + 30 * \frac{20}{100} = 36m$

$$\text{Curved surface area of sphere} = 4 \pi r^2 = 4 * \frac{22}{7} * 21 * 21 = 1764\pi \text{ m}^2$$

Curved surface area of cylinder = $2\pi rh =$

$$2 * \frac{22}{7} * 36 * 30 = 2160\pi \text{ m}^2$$

Required total = $1764\pi + 2160\pi = 3924\pi \text{ m}^2$

43. Answer: A

From quantity I,

Speed of the stream = x

Speed of boat A in still water = y

Speed of boat B in still water = z

Downstream speed of boat A = $(y+x)$ km/hr

Downstream speed of boat B = $(z+x)$ km/hr

Upstream speed of boat B = $(z-x)$ km/hr

$$(y+x) - (z+x) = 10$$

$$y - z = 10 \text{ ---- (1)}$$

$$(y+x) + (z-x) = 90$$

$$y + z = 90 \text{ ---- (2)}$$

$$(1) + (2)$$

$$2y = 100$$

$$y = 50$$

$$z = 40$$

Speed of boat in still water B = 40 km/hr

From quantity II,

Speed of the stream = s

Speed of boat A = $(s+40)$ km/hr

Speed of boat B = $(s+30)$ km/hr

Upstream speed of boat A = $s+40-s=40$ km/hr

Upstream speed of boat B = $s+30-s=30$ km/hr

Required average = $(40+30)/2=35$ km/hr

Quantity I > Quantity II

44. Answer: C

From quantity I,

CP of a jewel box = Rs.2250

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Profit obtained on whole
transaction = $2250 \times 140 / 100 + 2250 \times 83.33 / 100 - 2250 \times 2$
 $= 3150 + 2250 \times 5/6 - 4500$
 $= \text{Rs. } 525$

From quantity II,

CP of a printer = $5x$

MP of a printer = $8x$

$(8x - 2160) - 5x = 5x \times 12 / 100$

$3x - 2160 = 0.6x$

$2.4x = 2160$

$x = 900$

CP of a printer = $5 \times 900 = \text{R. } 4500$

Profit obtained by printer = $4500 \times 12 / 100 = \text{Rs. } 540$

Quantity II > Quantity I

45. Answer: C

From quantity I,

The number of red balls in bag A = r

The total number of balls in bag

$A = 19 + 11 + r = 30 + r$

$rC_1 / (30 + r)C_1 = 3/5$

$r / (30 + r) = 3/5$

$5r = 90 + 3r$

$2r = 90$

$r = 45$

The total number of balls in bag A = $30 + 45 = 75$

Required percentage = $45 / 75 \times 100 = 60\%$

The total number of balls in bag B = $28 \times 2 = 56$

The number of blue balls in bag B = x

The number of black balls in bag B = $56 - x$

$(x + 4) / (56 - x + 8) = 9/8$

$8x + 32 = 576 - 9x$

$x = 32$

The number of black balls in bag B Initially = $56 - 32 = 24$

The number of blue balls in Bag B Initially = 32

Required percentage = $24 / 32 \times 100 = 75\%$

Quantity II > Quantity I

46. Answer: A

From option (A)

The number of products in an electric shop = x

$(750 \times x + 550 + 290) / x = (750 + 70)$

$750x + 550 + 290 = 820x$

$840 = 70x$

$x = 12$

This is satisfied.

From option (B)

The number products in an electric shop = y

$(1200 \times y + 550 + 290) / y = (1200 + 70)$

$1200y + 550 + 290 = 1270y$

$70y = 840$

$y = 12$

This is not satisfied.

From option (C)

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The number products in an electric shop= z

$$(510 \cdot z + 550 + 290) / z = (510 + 70)$$

$$510z + 550 + 290 = 580z$$

$$70z = 840$$

$$z = 840 / 70$$

$$z = 12$$

This is not satisfied.

47. Answer: D

The total quantity of glass= $11x$

The quantity of milk in glass A= $9x$

The quantity of water in glass A= $2x$

The quantity of milk in glass B= $9x \cdot 100 / 120 = 7.5x$

The quantity of water in glass B= $7.5x \cdot 2 / 5 = 3x$

The total quantity of glass B= $7.5x + 3x = 10.5x$

$$11x - 10.5x = 4$$

$$x = 8$$

The quantity of milk in glass A= $9 \cdot 8 = 72$ liters

The quantity of milk in glass B= $7.5 \cdot 8 = 60$ liters

The quantity of water in glass B= $3 \cdot 8 = 24$ liters

The average quantity of milk in glasses A and

$$B = (72 + 60) / 2 = 66 \text{ liters}$$

The quantity of milk in glass= 66 liters

$$\text{Required ratio} = 66 : 24 = 11 : 4$$

48. Answer: B

The profit share of Noah=Rs.3450

The profit share of Liam= $8700 - 3450 = \text{Rs.}5250$

Ratio of the profit share of Liam and

$$\text{Noah} = 5250 : 3450 = 35 : 23$$

$$(x \cdot 16 + 2x \cdot 20) / (9000 \cdot 20 + 9000 \cdot 66(2/3)\% \cdot 16) = 35 / 23$$

$$56x \cdot 23 = (276000) \cdot 35$$

$$x = 7500$$

49. Answer: A

The monthly income of A= $12x$

The monthly income of B= $7x$

The monthly income of C= $12x \cdot 100 / 125 = 9.6x$

$$9.6x - 7x = 3900$$

$$x = 1500$$

The monthly income of A= $12 \cdot 1500 = \text{Rs.}18000$

The monthly income of B= $7 \cdot 1500 = \text{Rs.}10500$

The monthly income of C= $9.6 \cdot 1500 = \text{Rs.}14400$

The savings of A= $18000 - 13500 = \text{Rs.}4500$

The savings of B= $4500 \cdot 11 / 15 = \text{Rs.}3300$

The expenditure of B= $10500 - 3300 = \text{Rs.}7200$

Required percentage= $7200 / 14400 \cdot 100 = 50\%$

50. Answer: C

Compound interest obtained on 1st

$$\text{year} = 15000 \cdot 20 / 100 = \text{Rs.}3000$$

Compound interest obtained on 2nd

$$\text{year} = 18000 \cdot 10 / 100 = \text{Rs.}1800$$

Compound interest obtained on 3rd

$$\text{year} = 19800 \cdot 15 / 100 = \text{Rs.}2970$$

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Compound interest obtained end of three
years= $3000+1800+2970$ =Rs.7770

$$P \times 15 \times 7 / 100 = 7770$$

$$P = 7400$$