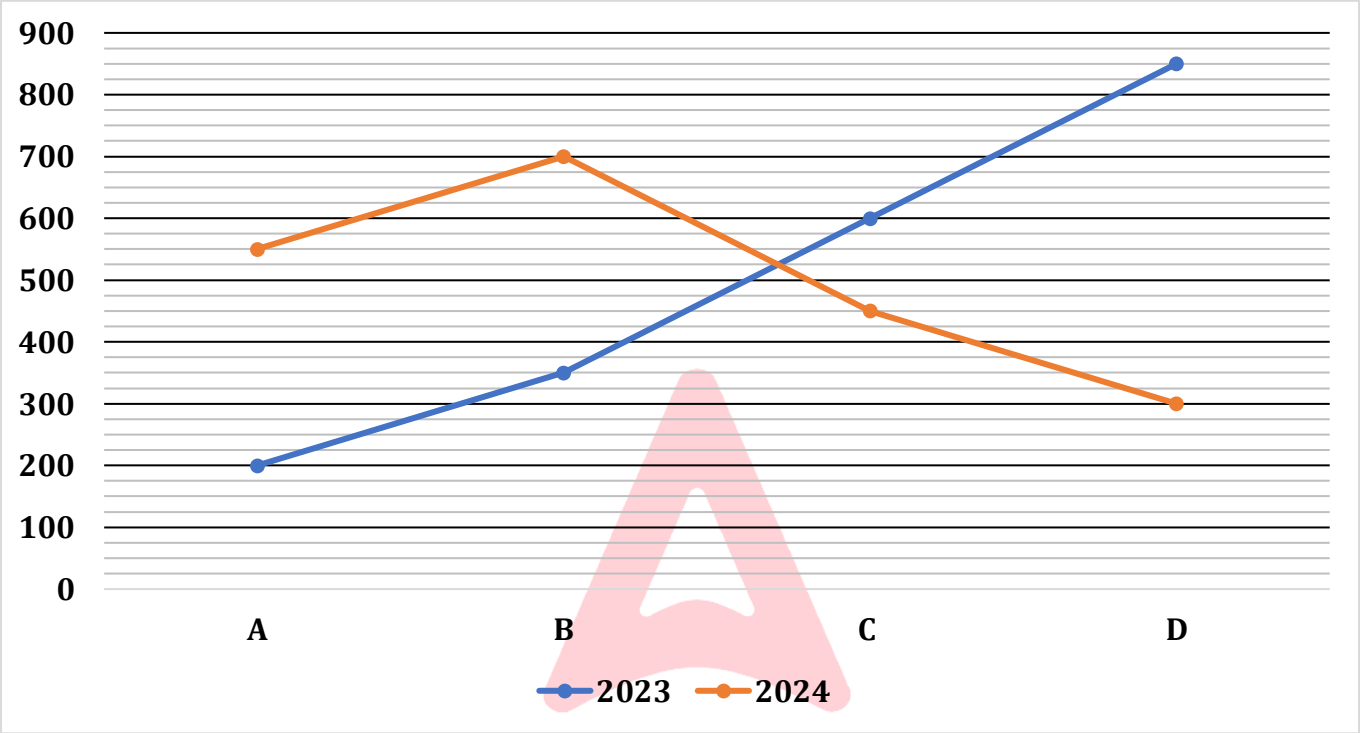
Banking (IBPS/SBI PO & Clerk)

SBI Clerk Mains 2025 — Quantitative Aptitude, 21 November

SBI CLERK Mains 2025 Memory Based on 21-11-2025 – Quantitative Aptitude

Directions (1-6): Read the following line graph carefully and answer the questions given below. The line graph shows the total population (males + females) in four different cities in two different years.



Q1. The ratio of total males to total females in city A in 2023 is 3:5, respectively. The total number of females in city A in 2024 is twice that in 2023. Find the difference between the total males in city A in 2023 and 2024.

(a) 300
(b) 225
(c) 150
(d) 175
(e) 250

Q2. The total population in city E in 2023 is 20% more than the total population in city B in 2023. If the total population in city E in 2023 and 2024 together is 1080, then find the total population in city E in 2024.

(a) 670
(b) 610
(c) 650
(d) 620
(e) 660

Q3. The total population in city B in 2022 is 10% less than the average of the total population in cities C and A in 2024. Find the ratio of the total population in city B in 2022 to the total population in city D in 2023.
(a) 9:17
(b) 11:12
(c) 13: 8
(d) 7:11
(e) 9:19

Q4. The total males in city D in 2023 is 60% of the total population in city B in 2024. The total number of males in city D in 2024 is half of the total number of males in city D in 2023. Find the total number of females in city D in 2023 and 2024 together.
(a) 540
(b) 550
(c) 520
(d) 510
(e) 530

Q5. The total population in city C in 2020 is 75% of the total population in city A in 2023. If 30% of the total population in city C in 2020 are males and the rest are females, then the total number of females in city C in 2020 is what percentage of the total population in city D in 2024?
(a) 20%
(b) 30%
(c) 35%
(d) 25%
(e) 10%

Q6. 11/17th of the total population in city D in 2023 are literate, and 3/5th of the total population in city B in 2023 are illiterate. Find the difference between the total literate population in cities B and D together in 2023 and the total illiterate population in cities B and D together in 2023.
(a) 180
(b) 190
(c) 120
(d) 140
(e) 150

Directions (7-10): Read the following information carefully and answer the questions given below. The information about the total number of students (boys and girls) in three (A, B and C) colleges.
The total number of students in all three colleges together is 290. The number of boys in A is 75% of the number of girls in B. The number of girls in C is 2.2 times more than the total number of boys in C. The number of girls in A is 5 more than the number of girls in B. The number of girls in C is twice the number of girls in B. The number of boys in B is 25 more than the number of girls in A.

Q7. Find the difference between the total number of boys in A and B together and the total number of girls in B and C together.
(a) 30
(b) 25
(c) 5
(d) 10
(e) 20

Q8. The total number of boys in A is what percentage of the total number of students in C?
(a) 6.67%
(b) 14.28%
(c) 33.33%
(d) 28.57%
(e) 83.63%

Q9. Find the ratio of the total number of girls in A to the total number of boys in C.
(a) 9:5
(b) 10:9
(c) 9:4
(d) 4:5
(e) 7:12

Q10. The total number of students in D is 20% more than that of A, and the ratio of boys in C to D is 5:7, respectively. Find the total number of girls in D.
(a) 40
(b) 55
(c) 60
(d) 65
(e) 45

Q11. The ratio of milk to water in Jar A is 8:7, respectively. In Jar B, the ratio of milk to water is 5:8, respectively, and the water in Jar B is 3 liters less than the water in Jar A. After mixing both jars in empty jar C, the milk in the new mixture (in jar C) is 7 liters less than the water. What is the quantity of water in the jar C (in liters)?
(a) 43
(b) 67
(c) 54
(d) 49
(e) 72

Q12. I. $6x^2 - 17x + 10 = 0$
II. $5y^2 - 28y + 15 = 0$
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.

Q13. I. $3x^2 - 5x - 2 = 0$
II. $10y^2 + 7y = -1$
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.

Q14. I. $6x^2 - 40x + 66 = 0$
II. $14y^2 - 58y + 60 = 0$
(a) x < y
(b) x > y
(c) x ≤ y
(d) x ≥ y
(e) x=y or no relation

Directions (15-18): What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

Q.15. $34.971\% \ of \ 80.13 \times 20.03\% \ of \ 250.01 - 423.87 = ? + 51.991 \times 8.13$
(a) 580
(b) 550
(c) 570
(d) 560
(e) 590

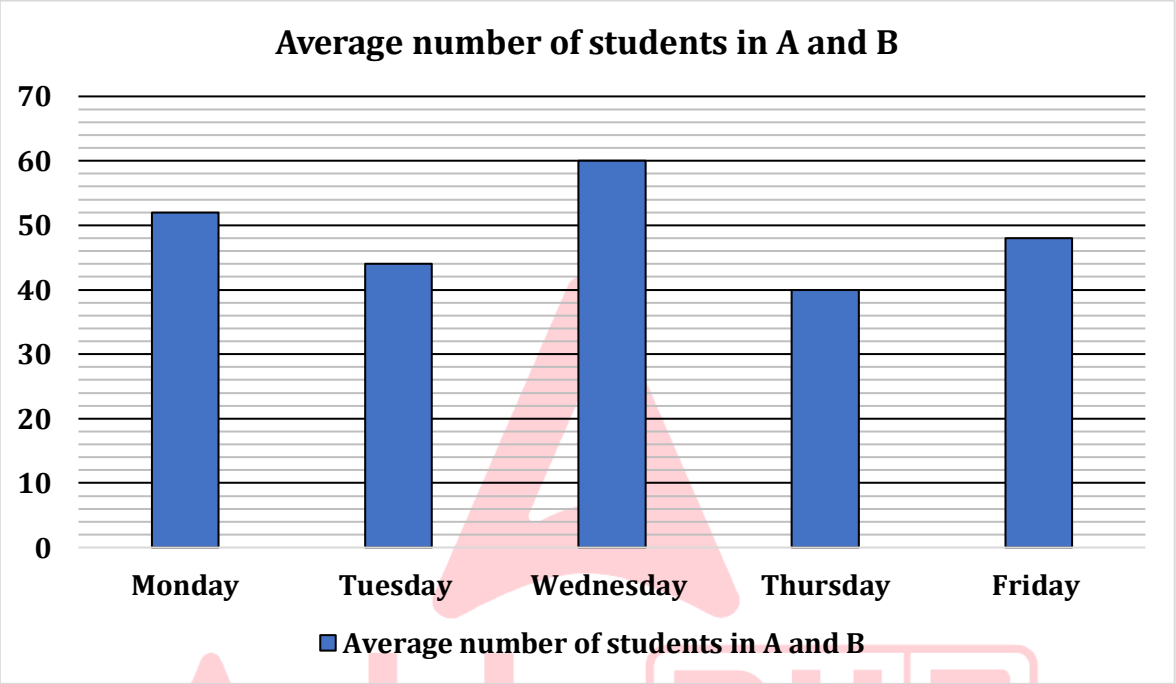
Q16. $45.0112 \div 64.992 \times 312.211 + 361.11 = ?^2 + 11.09 \times 32.13$
(a) 15
(b) 45
(c) 35
(d) 55
(e) 25

Q17. $?\% \ of \ (1131.145 - 501.923 - 241.02 - 187.79) = 59.99456$
(a) 30
(b) 50
(c) 40
(d) 60
(e) 70

Q18. $(? - 554.09) - 50.045\%\ of\ \left(\frac{6450.01}{42.91}\right) = 35.79 \times 41.12 \div 369.03$

(a) 647
(b) 537
(c) 679
(d) 511
(e) None of the above.

Directions (19-24): Read the bar graph carefully and answer the following questions.
The bar graph shows the average number of students in school A and B visiting on five days.



Note: On Monday, students visiting from B is 16 more than A.
Ratio of students visiting school on Monday to Friday from B is 10:3:5:4:6.

Q19. On Monday, the ratio of boy to girls visiting from A is 6:5, and boys visiting from B on Friday is equal to girl visiting from A on Monday. Find the girls visiting from B on Friday is what percentage of students visiting from A on Wednesday.

(a) 13.33%
(b) 12.04%
(c) 11.01%
(d)14.44%
(e) 15.55%

Q20. In school C total students are 20% more than average number of students visiting from B on Monday, Thursday and Friday. The ratio of students in C to D is 3:5. Find the total students in D.

(a) 90
(b) 100
(c) 110
(d) 80
(e) 120

Q21. Find the average number of students in B visiting all the given days.
(a) 33.6
(b) 33.7
(c) 33.3
(d) 33.9
(e) 33.8

Q22. The students from A visiting on Wednesday participated in two games kho kho and hockey. The students participated in kho-kho is 125% of hockey. Find the difference between total students participating hockey on Wednesday and total students visiting from both the schools on Thursday.
(a) 10
(b) 20
(c) 30
(d) 40
(e) 50

Q23. Total students visiting from A on Monday is what percent more/less of students visiting from B on Friday.
(a) 12.12%
(b) 33.33%
(c) 11.11%
(d) 22.22%
(e) 55.55%

Q24. If 20% and 55% of students not visiting on Monday from A and on Friday from B respectively. Find the sum of total students not visiting on Monday from A and on Wednesday from B.
(a) 11
(b) 22
(c) 33
(d) 44
(e) 55

Solutions

S1. Ans.(b)

Sol. Total males in city A in 2023 = $200 \times \frac{3}{8} = 75$
Total females in city A in 2023 = 200 -75 = 125
Total number of females in city A in 2024 = $2 \times 125 = 250$
Total number of males in city A in 2024 = 550 – 250 = 300
Required difference = 300 – 75 = 225

S2. Ans.(e)

Sol. Total population in city E in 2023 = $\frac{120}{100} \times 350 = 420$

Total population in city E in 2024 = 1080 – 420 = 660

S3. Ans.(a)

Sol. The total population in city B in 2022 = $\frac{90}{100} \times \frac{450+550}{2} = 450$

Required ratio = 450 : 850 = 9 : 17

S4. Ans.(c)

Sol. Total males in city D in 2023 = $\frac{60}{100} \times 700 = 420$

Total females in city D in 2023 = 850 – 420 = 430

Total number of males in city D in 2024 = $\frac{420}{2} = 210$

Total females in city D in 2024 = 300 – 210 = 90

Total number of females in city D in 2023 and 2024 together = 430 + 90 = 520

S5. Ans.(c)

Sol. Total population in city C in 2020 = $\frac{75}{100} \times 200 = 150$

Total number of females in city C in 2020 = $150 \times \frac{70}{100} = 105$

Required percentage = $\frac{105}{300} \times 100 = 35\%$

S6. Ans.(a)

Sol. Total literate population in cities D in 2023 = $\frac{11}{17} \times 850 = 550$

Total illiterate population in cities D in 2023 = 850 – 550 = 300

Total illiterate population in cities B in 2023 = $\frac{3}{5} \times 350 = 210$

Total literate population in cities B in 2023 = 350 – 210 = 140

Required difference = (550 + 140) – (300 + 210)

= 690 – 510

= 180

Solutions (7-10):

Let the number of girls in B be 4x

The number of boys in A = $4x \times \frac{75}{100} = 3x$

The number of girls in A = 4x + 5

The number of girls in C is 2.2 times more than the total number of boys in C.

Let total number of boys in C be 'y'

So, total number of girls in C = y + 2.2y = 3.2y

The number of girls in C = $2 \times 4x = 8x$

The number of boys in C = $\frac{8x}{3.2y} \times y = 2.5x$

The number of boys in B = 25 + 4x + 5 = 4x + 30

Given,
3x + (4x + 5) + (4x + 30) + 4x + 2.5x + 8x = 290
25.5x = 255
x = 10

Colleges	Boys	Girls	Total
A	30	45	75
B	70	40	110
C	25	80	105
Total	**125**	**165**	**290**

S7. Ans.(e)
Sol. Required difference = (40 + 80) - (30 + 70)
= 120 – 100 = 20

S8. Ans.(d)
Sol. Required percentage = $\frac{30}{105} \times 100 = 28\frac{4}{7}\% = 28.57\%$

S9. Ans.(a)
Sol. Required ratio = 45 : 25
= 9 : 5

S10. Ans.(b)
Sol. The total number of students in D = $\frac{120}{100} \times 75 = 90$
Total number of boys in D = $25 \times \frac{7}{5} = 35$
Total number of girls in D = 90 – 35 = 55

S11. Ans.(b)
Sol. Information Given in the Question:
Jar A: Milk : Water = 8 : 7
Jar B: Milk : Water = 5 : 8
Water in Jar B = Water in Jar A – 3 liters
In final mixture: Milk = Water – 7 liters
We need to find: Final quantity of water in the mixture
Detailed Explanation:
Let the quantity of Jar A = 15x (since 8 + 7 = 15 parts)
Milk in A = 8x
Water in A = 7x
Let the quantity of Jar B = 13y (since 5 + 8 = 13 parts)
Milk in B = 5y
Water in B = 8y
Given:
Water in B = Water in A – 3
=> 8y = 7x – 3 → (Equation 1)

After mixing both jars:
Total Milk = 8x + 5y
Total Water = 7x + 8y
Given: Total Milk = Total Water – 7
=> 8x + 5y = 7x + 8y – 7 → (Equation 2)
Solving Equation 2:
8x + 5y = 7x + 8y – 7
8x – 7x + 5y – 8y = –7
x – 3y = –7 → (Equation 3)
Now solve Equations 1 and 3:
From (3): x = 3y – 7
Substitute in (1):
8y = 7(3y – 7) – 3
8y = 21y – 49 – 3
8y = 21y – 52
52 = 13y
y = 4
Substitute back to find x:
x = 3(4) – 7 = 5
Now calculate total water:
Water in Jar A = 7x = 7 × 5 = 35 L
Water in Jar B = 8y = 8 × 4 = 32 L
Total Water = 35 + 32 = 67 liters

S12. Ans.(e)
Sol. I. $6x^2 - 17x + 10 = 0$
$6x^2 - 12x - 5x + 10 = 0$
$6x(x - 2) - 5(x - 2) = 0$
$x = 2, 5/6$
II. $5y^2 - 28y + 15 = 0$
$5y^2 - 25y - 3y + 15 = 0$
$5y(y - 5) - 3(y - 5) = 0$
$y = 5, 3/5$
∴ No relation

S13. Ans.(e)
Sol. I. $3x^2 - 5x - 2 = 0$
$3x^2 - 6x + x - 2 = 0$
$3x(x - 2) + 1(x - 2) = 0$
$(x - 2)(3x + 1) = 0$
$x = 2, -\frac{1}{3}$
II. $10y^2 + 7y + 1 = 0$
$10y^2 + 5y + 2y + 1 = 0$
$5y(2y + 1) + 1(2y + 1) = 0$
$y = -\frac{1}{2}, \frac{-1}{5}$
No relation

S14. Ans.(b)

Sol. I. $6x^2-40x+66=0$

$\Rightarrow 6x^2-22x-18x+66=0$

$\Rightarrow 2x(3x-11)-6(3x-11)=0$

$\Rightarrow (2x-6)(3x-11)=0$

$x=3$ or $\frac{11}{3}$

II. $14y^2-58y+60=0$

$\Rightarrow 14y^2-28y-30y+60=0$

$\Rightarrow 14y(y-2)-30(y-2)=0$

$\Rightarrow (14y-30)(y-2)=0$

$y=\frac{15}{7}$ or 2

$x > y$

S15. Ans.(d)

Sol. $\frac{35}{100}\times 80\times \frac{20}{100}\times 250 - 424 = ? + 52\times 8$

$1400 - 424 = ? + 416$

$? = 560$

S16. Ans.(a)

Sol. $45\times \frac{1}{65}\times 312 + 361 = ?^2 + 11\times 32$

$577 = ?^2 + 352$

$? = (225)^{\frac{1}{2}}$

$? = 15$

S17. Ans.(a)

Sol. $\frac{?}{100}\times (1131-502-241-188) = 60$

$\frac{?}{100}\times 200 = 60$

$? = \frac{60}{2}$

$? = 30$

S18. Ans.(e)

Sol. $? - 554 - \frac{50}{100}\times \frac{6450}{43} = \frac{36\times 41}{369}$

$? - 554 - 75 = 4$

$? = 4 + 629$

$? = 633$

Solutions (19-24):

Total students visiting on Monday from A and B = 52×2=104

Total students visiting on Tuesday from A and B = 44×2=88

Total students visiting on Wednesday from A and B = 60×2=120

Total students visiting on Thursday from A and B = 40×2=80

Total students visiting on Friday from A and B = 48×2=96

According to note
A+B = 104 and B = 16 + A
Solving above we get
B = 60 and A = 44
students visiting school on Monday to Friday from B is 10x, 3x, 5x, 4x and 6x
10x = 60
6 = x
students visiting school on Monday to Friday from B is 60, 18, 30, 24 and 36
students visiting school on Monday from A = 104 – 60
students visiting school on Tuesday from A = 88 – 18 = 70
students visiting school on Wednesday from A = 120 – 30= 90
students visiting school on Thursday from A = 80 – 24 = 56
students visiting school on Friday from A = 96 – 36 = 60

Days	Total	A	B
Monday	104	44	60
Tuesday	88	70	18
Wednesday	120	90	30
Thursday	80	56	24
Friday	96	60	36
Total	488	320	168

S19. Ans.(a)
Sol. boy and girls visiting from A is be 6x and 5x.
11x = 44
4 = x
boys visiting from B on Friday = 6x = 24
Girls visiting from B on Friday =36- 24 = 12
Required answer = $\frac{12}{90} \times 100 = 13.33\%$

S20. Ans.(d)
Sol. Total students in C = 120% of (60+24+36/3) =48
Total students in D = $48 \times \frac{5}{3} = 80$

S21. Ans.(a)
Sol. Required answer = $\frac{168}{5} = 33.6$

S22. Ans.(d)
Sol. Kho-kho:hockey = 125:100 = 5:4= 5m:4m
9m = 90
10 = m
Students participated in hockey = 4m = 40
Required answer = 80 - 40 = 40

S23. Ans.(d)

Sol. Required answer = $\frac{44-36}{36} \times 100 = 22.22\%$

S24. Ans.(e)

Sol. Total students not visiting on Monday from A = $\frac{20}{80} \times 44 = 11$

Total students not visiting on Friday from B = $\frac{55}{100-55} \times 36 = 44$

Required answer = 11+44 = 55