IBPS RRB 2021 Quantitative Aptitude Practice PDF with Solution

1.I. $X^2 + 12X - 28 = 0$
II. $Y^2 - 15Y + 36 = 0$
A. Y > X
B. X > Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relation can be established

2. **I.** $6X^2 + 11X - 7 = 0$
II. $2Y^2 + 9Y - 5 = 0$
A. Y > X
B. X > Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relation can be established

3. **I.** $X^2 + 9 = 6X$
II. $Y^2 - 3 = 2Y$
A. Y > X
B. X > Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relation can be established

4. **I.** $X^2 - X - 56 = 0$
II. $Y^2 + 16Y + 63 = 0$
A. Y > X
B. X > Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relation can be established

5. **I.** $X^2 - 5X - 66 = 0$
II. $Y^2 - 16Y + 39 = 0$
A. Y > X
B. X > Y
C. X ≤ Y
D. X ≥ Y
E. X = Y or no relation can be established

6. A dealer marked the price of an item 20% above cost price. He allowed two successive discount of 10% and 20% to a customer. As a result he incurred a loss of Rs. 544. What is the cost price of the item?
A. Rs. 4500
B. Rs. 3600

C. Rs. 4000
D. Rs. 4200
E. Rs. 3200

7. If the compound interest on an amount of Rs. 12500 in two years is Rs. 1545, what is the rate of interest?
A. 6%
B. 9%
C. 5%
D. 8%
E. 10.5%

8. A sum is divided among A, B & C such that if their respective shares are increased by Rs. 120, Rs. 150 & Rs. 90 respectively, their shares are in the ratio 9 : 8 : 6 & the total amount becomes Rs. 2300. What was the ratio of their initial shares?
A. 6 : 5 : 4
B. 78 : 65 : 51
C. 71 : 63 : 57
D. 7 : 6 : 5
E. 39 : 32 : 27

9. Average marks of Rahul, Manish and Suresh is 63. Rahul's marks is 15 less than Ajay and 10 more than Manish. If Ajay scored 30 marks more than the average marks of Rahul, Manish and Suresh, what is the sum of Manish's and Suresh's marks?
A. 120
B. 111
C. 117
D. Cannot be determined
E. None of these

10. The respective ratio between the present ages of Ram and Rakesh is 6 : 11. Four years ago, the ratio of their ages was 1 : 2 respectively. What will be Rakesh's age after five years?
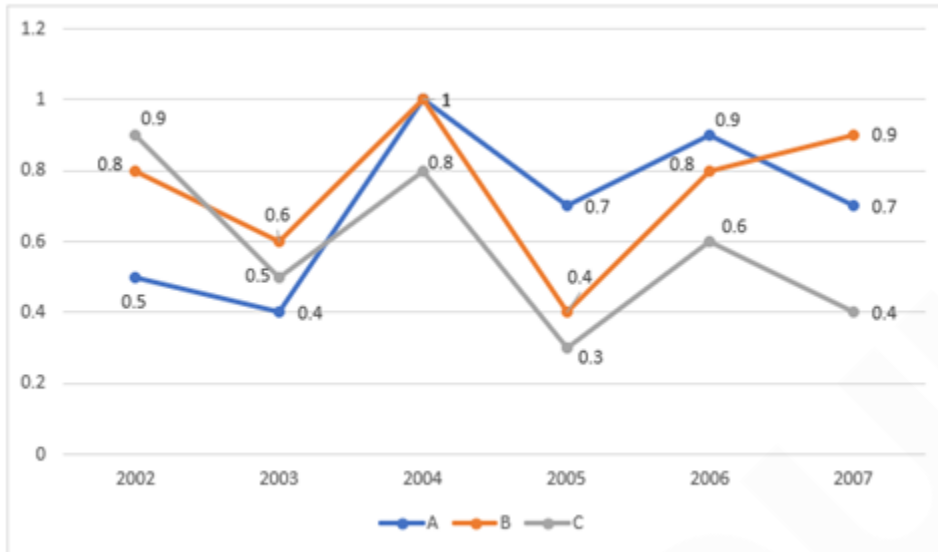A. 45 years
B. 29 years
C. 49 years
D. Cannot be determined
E. None of these

Direction: Following line graph shows the ratio of expenditure to income of three companies A, B and C during the period 2002-2007.

11. In which of the following years the percentage loss/profit of Company C is the maximum?
A. 2002
B. 2003
C. 2004
D. 2005
E. 2006

12. If the expenditure of Company A in 2002 and 2003 together is Rs. 60 lakhs, then what is the income of A in 2002 and 2003 together?
A. Rs. 120 lakhs
B. Rs. 150 lakhs
C. Rs. 66.66 lakhs
D. Data inadequate
E. None of these

13. If the expenditure of Company B in 2003 and 2006 is Rs. 48 lakh and Rs. 60 lakhs respectively then what is its income in 2003 and 2006 together?
A. Rs. 1.05 crore
B. Rs. 1.55 crore
C. Rs. 1.25 crore
D. Rs. 1.75 crore
E. Data inadequate

14. In which of year does Company C gain 100% profit?
A. 2002
B. 2003

C. 2004
D. 2005
E. None of these

15. What is the percentage decrease in the percentage profit of Company C from 2003 to 2004?
A. 75%
B. 300%
C. 62.5%
D. 160%
E. None of these

ANSWERS:

1. Ans. A.
I. $X^2 + 12X - 28 = 0$
$\Rightarrow X^2 - 2X + 14X - 28 = 0$
$\Rightarrow X(X - 2) + 14(X - 2) = 0$
$\Rightarrow (X + 14)(X - 2) = 0$
$\Rightarrow X = -14, 2$
II. $Y^2 - 15Y + 36 = 0$
$\Rightarrow Y^2 - 12Y - 3Y + 36 = 0$
$\Rightarrow Y(Y - 12) - 3(Y - 12) = 0$
$\Rightarrow (Y - 12)(Y - 3) = 0$
$\Rightarrow Y = 12, 3$
Here, $Y > X$.
Hence, the answer is option A.
2. Ans. E.
I. $6X^2 + 11X - 7 = 0$
$\Rightarrow 6X^2 - 3X + 14X - 7 = 0$
$\Rightarrow 3X(2X - 1) + 7(2X - 1) = 0$
$\Rightarrow (3X + 7)(2X - 1) = 0$
$\Rightarrow X = -\dfrac{7}{3}, \dfrac{1}{2}$
II. $2Y^2 + 9Y - 5 = 0$
$\Rightarrow 2Y^2 + 10Y - Y - 5 = 0$
$\Rightarrow 2Y(Y + 5) - 1(Y + 5) = 0$
$\Rightarrow (2Y - 1)(Y + 5) = 0$
$\Rightarrow Y = \dfrac{1}{2}, -5$
No relation can be established.
Hence, the answer is option E.
3. Ans. D.
I. $X^2 + 9 = 6X$
$\Rightarrow X^2 - 6X + 9 = 0$
$\Rightarrow X^2 - 3X - 3X + 9 = 0$
$\Rightarrow X = 3$
II. $Y^2 - 3 = 2Y$
$\Rightarrow Y^2 - 2Y - 3 = 0$
$\Rightarrow Y^2 + Y - 3Y - 3 = 0$
$\Rightarrow Y(Y + 1) - 3(Y + 1) = 0$
$\Rightarrow (Y - 3)(Y + 1) = 0$
$\Rightarrow Y = 3, -1$
Here, $X \geq Y$.
Hence, the answer is option D.
4. Ans. D.
I. $X^2 - X - 56 = 0$

$\Rightarrow X^2 − 8X + 7X − 56 = 0$
$\Rightarrow X(X − 8) + 7(X − 8) = 0$
$\Rightarrow (X + 7)(X − 8) = 0$
$\Rightarrow X = −7, 8$
II. $Y^2 + 16Y + 63 = 0$
$\Rightarrow Y^2 + 7Y + 9Y + 63 = 0$
$\Rightarrow Y(Y + 7) + 9(Y + 7) = 0$
$\Rightarrow (Y + 9)(Y + 7) = 0$
$\Rightarrow Y = −7, −9$
Here, $X \geq Y$.
Hence, the answer is option D.
5. Ans. E.
I. $X^2 − 5X − 66 = 0$
$\Rightarrow X^2 + 6X − 11X − 66 = 0$
$\Rightarrow X(X + 6) − 11(X + 6) = 0$
$\Rightarrow (X + 6)(X − 11) = 0$
$\Rightarrow X = 11, −6$
II. $Y^2 − 16Y + 39 = 0$
$\Rightarrow Y^2 − 3Y − 13Y + 39 = 0$
$\Rightarrow Y(Y − 3) − 13(Y − 3) = 0$
$\Rightarrow (Y − 3)(Y − 13) = 0$
$\Rightarrow Y = 3, 13$
No relation can be established.
Hence, the answer is option E.
6. Ans. C.
Let CP = Rs. 100
Then, MP = Rs. 120
After 2 successive discount which is,
10% and 20% so it will be 90% and 80%,
Then,
SP = 120 × (90/100) × (80/100) = Rs. 86.4
Loss = 100 − 86.4 = Rs. 13.6
13.6% of CP = 544
$\Rightarrow$ CP = 100 × (544/13.6) = Rs. 4000
Hence, option C.
7. Ans. A.
$12500(1 + r/100)^2 − 12500 = 1545$
$\Rightarrow 12500(1 + r/100)^2 = 14045$
$\Rightarrow (1 + r/100)^2 = 2809/2500$
$\Rightarrow r = 6\%$
8. Ans. B.
As the ratio of their new shares is 9:8:6, their respective shares are:
A's share = (9/23) × 2300 = Rs.900
B's share = (8/23) × 2300 = Rs.800

C's share = (6/23) × 2300 = Rs.600
So, A's original share = 900 − 120 = Rs.780
B's original share = 800 − 150 = Rs.650
C's original share = 600 − 90 = Rs.510
So, ratio of their original shares = 780:650:510 = 78:65:51
9. Ans. B.
Ajay's marks = 63 + 30 = 93
∴ Rahul's marks = 93 − 15 = 78
∴ Sum of Manish's and Suresh's marks = 3 ×63 − 78 = 189 − 78 = 111
10. Ans. C.
Let the present ages of Ram and Rakesh be 6x and 11x respectively.
According to question,
$$\frac{6x - 4}{11x - 4} = \frac{1}{2}$$
⇒ 12x − 8 = 11x − 4
⇒ x = 4
Hence, Rakesh's age after 5 year = 11 × 4 + 5 = 44 + 5 = 49 years
11. Ans. D.
Ratio is given between expenditure and income.
Profit = [(Income − Expenditure)/ Expenditure] × 100
Loss percentage = [(Expenditure − Income)/ Expenditure] × 100
Expenditure to Income Ratio is minimum in 2005 i.e. is 0.3 therefore in this year % profit is maximum.
12. Ans. D.
Data Inadequate because the individual expenditure of A for given years is not given and thus Income of A in 2002 and 2003 together cannot be determined.
13. Ans. B.
Income of B in 2003 = 48/0.6 = 80
Income of B in 2006 = 60/0.8 = 75
Income in 2003 and 2006 together = 80 + 75 = 155 lakhs = 1.55 crore
14. Ans. B.
Company C gain 100% in 2003 because expenditure is half of income in 2003.
15. Ans. A.
Let income of C in 2003 = Rs. 10
Expenditure of C in 2003 = 0.5 × 10 = Rs. 5
Profit Percentage of C in 2003 = [(10 − 5)/5] × 100 = 100%
Let income of C in 2004 = Rs. 100
Expenditure of C in 2003 = 0.8 × 100 = Rs. 80
Profit Percentage of C in 2004 = [(100 − 80)/80] × 100 = 25%
Percentage decrease in profit percent = 75%