

# Banking Daily Quiz Blog - May 24



1. When the market price per kg of rice and wheat be in the ratio 3 : 2. The monthly expenses of a family towards rice and wheat are in the ratio 5 : 6. If the market price of rice and wheat becomes in the ratio of 4 : 3, what will be the ratio of expenses toward them? (the amount of rice and wheat consumed remains unchanged)

A 23 : 27

B 20 : 26

C 22 : 27

**D 20 : 27**

E None of these

### Solution

Let the market price per kg of rice and wheat is Rs.  $3x$  and Rs.  $2x$  respectively

Monthly expenses for rice and wheat is Rs.  $5y$  and Rs.  $6y$  respectively

$$\text{Amount of rice} = \frac{5y}{3x} \text{ kg}$$

$$\text{Amount of wheat} = \frac{6y}{2x} \text{ kg}$$

New price of rice and wheat is Rs.  $4z$  and Rs.  $3z$  respectively

$$\text{So, required ratio} = \frac{5y \times 4z}{3x} : \frac{6y}{2x \times 3z} = \frac{20}{3} : \frac{18}{2} = 20 : 27$$

$\therefore$  Ratio of expense is  $20 : 27$

2. The speed of two boats in still water is 26 km/hr and 28 km/hr respectively. Fast boat is running from A to B downstream and other one is in opposite direction. Find out how much time will they take to meet each other if the speed of current is 2 km/hr and the distance between A and B is 80 Km.

**A** 1.48 hours

B 1.23 hours

C 1.36 hours

D 2.4 hours

E 4.2 hours

### Solution

Let the speed of a boat in still water is  $S_B$  and speed of a stream is  $S_C$  and Speed of a boat in upstream is  $S_U$ .

Speed of fast boat downstream,  $S_F = 28 + 2 = 30$  km/hr

Speed of slow boat upstream,  $S_S = 26 - 2 = 24$  km/hr

$$S_F + S_S = \frac{\text{Total Distance}}{\text{Time}}$$

$$\Rightarrow (30 + 24) = \frac{80}{\text{Time}}$$

$$\Rightarrow 54 = \frac{80}{\text{Time}}$$

$$\therefore \text{Time} = \frac{80}{54} = 1.48 \text{ hours}$$

3. What is the ratio of the amounts of Rs. 40000 after 9 years and Rs. 44000 after 7 years at an interest of 10% per annum compounded annually?

A 9 : 7

B 10 : 11

**C 11 : 10**

D 121 : 100

E 100 : 121

### Solution

On a sum of Rs.  $P$  at a rate of  $R\%$  per annum compounded annually,

$$\text{Amount after } n \text{ years} = P\left(1 + \frac{R}{100}\right)^n$$

$$\text{On a sum of Rs. 40000, Amount after 9 years} = 40000 \times \left(1 + \frac{10}{100}\right)^9$$

$$\text{On a sum of Rs. 44000, Amount after 7 years} = 44000 \times \left(1 + \frac{10}{100}\right)^7$$

$$\text{Amount after 9 years/Amount after 7 years} = \frac{40000}{44000} \times \left(1 + \frac{10}{100}\right)^2$$

$$= \frac{10}{11} \times \frac{110}{100} \times \frac{110}{100}$$

$$= \frac{11}{10}$$

∴ Required ratio = 11 : 10

4. If the cost price of 2 copies of a book is equal to the Marked price of one copy of the same book and the cost price of 3 copies of the same book is equal to the selling price of 2 copies of the same book, which of the following statements is correct?

A

Marked price of 4 copies of the book is equal to selling price of 3 copies of the same book

B

Discount of 20% is offered on the Marked price of the book

C

Marked price of 3 copies of the book is equal to the selling price of 4 copies of the same book

D

Discount of 33.33% is offered on the Marked price of the book

E

None of these

### Solution

Cost price of 2 copies is equal to the Marked Price of one copy

If  $CP = x$ , then  $MP = 2x$

Cost price of 3 copies is equal to the Selling Price of 2 copies

$$\Rightarrow 3 CP = 2 SP$$



$$\Rightarrow SP = 1.5x$$

So a discount of  $(2x - 1.5x) = 0.5x$  is offered on the Marked Price

$$\text{Discount}\% = \frac{MP - SP}{MP} \times 100\%$$

$$\Rightarrow \frac{2x - 1.5x}{2x} \times 100\% = \frac{0.5x}{2x} \times 100\% = 0.25 \times 100\% = 25\%$$

So the options 2 and 4 are incorrect

Consider option 1, MP of 4 copies =  $8x$  and SP of 3 copies =  $6x$  (Option 1 is incorrect)

Consider option 3, MP of 3 copies =  $6x$  and SP of 4 copies =  $6x$  (Option 3 is correct)

$\therefore$  Required answer = Option 3

5. A and B get a work to be done for Rs. 30960. A and B can finish the work in 18 days and 24 days respectively. But they need help to finish the work in 8 days so they called C. Find C's salary?

A Rs. 6820

B Rs. 6860

C Rs. 6840

**D Rs. 6880**

E None of these

### Solution

Time taken by A = 18 days

Time taken by B = 24 days

Time taken by A, B and C = 8 days

Let Total work = LCM of 18, 24 and 8 = 72 units

Efficiency of A =  $\frac{72}{18} = 4$  units/day

Efficiency of B =  $\frac{72}{24} = 3$  units/day

Efficiency of A, B and C together =  $\frac{72}{8} = 9$  units/day

Efficiency of C = Total efficiency - Efficiency of (A + B)

Efficiency of C =  $9 - (4 + 3) = 9 - 7 = 2$  units/day

Work done by C =  $2 \times 8 = 16$  units

For 72 units they get = Rs. 30960

1 unit = Rs. 430

$\therefore$  C's salary =  $16 \times 430 = \text{Rs. } 6880$

6. A plot is in shape of rectangle need to be fenced at boundary and harvesting the crop inside the area. Harvesting cost of wheat is Rs. 25 per  $m^2$  and for rice is Rs. 30 per  $m^2$ . For fencing, cost per meter is Rs. 15. If the ratio of the area of plant wheat and rice is 3 : 5, and the width and the diagonal are 28 m and 53 m respectively. Total costing is Rs \_

A 36273.6

**B 37627.5**

C 38972.4

D 32794.4

E 38123.5

### Solution

Width of rectangle = 28 m

Diagonal of rectangle = 53 m

Length of rectangle =  $\sqrt{53^2 - 28^2} = 45$  m [by using Pythagoras theorem]

Perimeter of rectangle =  $2[\text{length} + \text{width}] = 2[45 + 28] = 146$  m

$$\text{Fencing cost} = 146 \times 15 = \text{Rs. } 2190$$

$$\text{Area of rectangle} = \text{length} \times \text{width} = 45 \times 28 = 1260 \text{ m}^2$$

$$\text{Area of wheat plantation} = \frac{3}{3+5} \times 1260 = 472.5 \text{ m}^2$$

$$\text{Area of rice plantation} = 1260 - 472.5 = 787.5 \text{ m}^2$$

$$\text{Cost for wheat plantation} = 472.5 \times 25 = \text{Rs. } 11,812.5$$

$$\text{Cost for rice plantation} = 787.5 \times 30 = \text{Rs. } 23,625$$

$$\therefore \text{Total cost} = 2190 + 11812.5 + 23625 = \text{Rs. } 37,627.5$$

7. The following question has two statements. Study the question and the statements and decide which of the statement(s) is/are necessary to answer the question.

The selling price of a watch is Rs. 3600. Calculate the marked price of watch on the day of New Year.

I) The retailer declared discount of 20% on the marked price of the watch.

II) On the occasion of New Year, he offers an extra 25% off as final discount after initial discount.

A Only I

B Only II

C Both I and II

D Either I or II

E None of the above

### Solution

Let marked price of the watch be Rs. 'x'

Considering statement I,

Price of watch after 20% discount =  $(100 - 20)\%$  of  $x = 0.8x$

Considering statement II,

25% discount was offered on the watch after the initial discount

Using information from statement I,

$\Rightarrow$  Selling price of watch =  $(100 - 25)\%$  of  $0.8x$

$\Rightarrow 0.75 \times 0.8x = 3600$

$\Rightarrow x = \frac{3600}{0.6} = \text{Rs. } 6000$

$\therefore$  Both the statements are necessary to answer the question

8. The following question has two statements. Study the question and the statements and decide which of the statement(s) is necessary to answer the question.

A committee of 5 people is to be formed with 2 female and 3 male trainers. The “talent pool” from where trainers are to be shortlisted has total ‘x’ female and ‘y’ male trainers. The probability of choosing the committee is given as  $\frac{3}{5}$ . What is the total number of trainers in the “talent pool”?

I) The number of ways in which 2 trainers can be chosen from the “talent pool” is 15.

II) The number of ways 2 female trainers can be chosen from ‘x’ female trainers is 3.

A Only I

B Only II

C Both I and II

D Either I or II

E Neither I nor II



## Solution

Let the total no. of trainers be 'z' = x + y

Given, probability of choosing the committee = No. of ways of choosing the committee satisfying the conditions/Total no. of ways in which committee can be formed without restriction =  $\frac{3}{5}$

$$\Rightarrow \frac{3}{5} = \frac{{}^x C_2 \times {}^y C_3}{{}^z C_5} \text{ ----(1)}$$

From Statement I,

2 trainers can be chosen from the "talent pool" in 15 ways

$$\Rightarrow (x+y) C_2 = 15$$

$$\Rightarrow \frac{(x+y)!}{2!} \times (x+y-2)! = 15$$

$$\Rightarrow \frac{(x+y)(x+y-1)}{2} = 15$$

$$\Rightarrow z(z-1) = 30$$

$$\Rightarrow z = 6$$

From Statement II,

The number of ways 2 female trainers can be chosen from 'x' female trainers is 3

$$\Rightarrow {}^x C_2 = 3$$

$$\Rightarrow \frac{x!}{2!} \times (x-2)! = 3$$

$$\Rightarrow (x)(x-1) = 6$$

$$\Rightarrow x = 3$$

'y' can be found by substituting x in equation (1)

∴ The question can be answered using either of the statement



9. The question given below consists of a statement and /or a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statement(s) is/are sufficient to answer the given question.

**What is the speed of the train whose length is 420 metres?**

**I. The train crosses another train of 600 metres length running in opposite direction in 20 seconds**

**II. The train travelling crosses another train running in the same direction at the speed of  $\frac{50}{3}$  m/sec in 60 seconds**

A

Statement (1) alone is sufficient, but statement (2) alone is not sufficient to answer the question asked

B

Statement (2) alone is sufficient, but statement (1) alone is not sufficient to answer the question asked

C

**Both statements (1) and (2) together are sufficient to answer the question asked, but neither statement alone is sufficient**

D

Each statement alone is sufficient to answer the question asked

E

Statements (1) and (2) together are not sufficient to answer the question asked, and additional data are needed

## Solution

Let the length of the first and second train be  $L_1$  and  $L_2$  respectively

Speed of the first and second train be  $S_1$  and  $S_2$  respectively

Statement 2:

Time taken to cross the train running in opposite direction =  $\frac{L_1+L_2}{S_1+S_2}$  sec

$$\Rightarrow 20 = \frac{420+600}{S_1+S_2}$$

$$\Rightarrow (S_1 + S_2) = \frac{1020}{20}$$

$$\Rightarrow (S_1 + S_2) = 51 \text{ ----(1)}$$

Statement 2:

Time taken to cross the train running in the same direction =  $\frac{L_1+L_2}{S_1-S_2}$  sec

$$\Rightarrow 60 = (420 + 600) \left[ S_1 - \frac{50}{3} \right]$$

$$\Rightarrow \left[ S_1 - \frac{50}{3} \right] = 17$$

$$\Rightarrow S_1 = \left[ 17 + \frac{50}{3} \right] \text{ m/sec}$$

$\Rightarrow$  Thus,  $S_1$  and  $S_2$  can be obtained

10. **Directions:** Each question below is followed by two statements I and II. You have to determine whether the data given in the statement is sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose the best possible answer.

**In how many days will Raju alone complete the work?**

**I. Aman alone can do the work in 20 days. Raju is 10% more efficient than Aman and Naina.**

**II. Aman and Raju together can finish the work in  $8\frac{2}{11}$  days, Raju and Naina in  $7\frac{1}{5}$  days and, Naina and Aman can do the same work in  $6\frac{2}{3}$  days.**

**A**

If the data given in statement I alone are sufficient to answer the question whereas the data given in statement II alone are not sufficient to answer the question.

**B**

If the data given in statement II alone are sufficient to answer the question whereas the data given in statement I alone are not sufficient to answer the question.

**C**

If the data in either statement I alone or in statement II alone are sufficient to answer the question

**D**

If the data in both the statements I and II are not sufficient to answer the question.

E

If the data given in both the statements I and II are necessary to answer the question.

### Solution

From statement I:

No information about Naina's work capacity is given, so answer cannot be determined.

From Statement II:

$$2(\text{Raju} + \text{Aman} + \text{Naina})\text{'s 1 day work} = \frac{11}{90} + \frac{5}{36} + \frac{3}{20} = \frac{74}{180}$$

$$\Rightarrow (\text{Raju} + \text{Aman} + \text{Naina})\text{'s 1 day work} = \frac{37}{180}$$

$$\text{Raju's 1 day work} = \frac{37}{180} - (\text{Naina and Aman})\text{'s 1 day work}$$

$$= \frac{37}{180} - \frac{3}{20} = 18 \text{ days}$$

Hence, only statement II is sufficient.

 **ENTRI**

