

# RATIOS & PERCENTAGES FROM CSS PART PAPERS I

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## CSS 2017 Q# 8 (a):-

Divide Rs. 500 between Arham, Mariam and Sarim so that Arham gets  $\frac{2}{3}$  of what Mariam gets and Mariam gets  $\frac{1}{4}$  of what Sarim gets. Find the share of each.

GIVEN:- Rupees to be divided = Rs. 500

$$\text{Arham} = \frac{2}{3} (\text{Mariam}) - (1)$$

$$\text{Mariam} = \frac{1}{4} (\text{Sarim}) - (2)$$

REQUIRED:- a) Share of Arham (A) = ?

b) Share of Mariam (M) = ?    c) Share of Sarim (S) = ?

SOLUTION:- As the total amount have to be divided among the three, So: Total = A + M + S - (A)

Putting value of Mariam from (2) in eq (1), we get:

$$A = \frac{2}{3} \left( \frac{1}{4} S \right)$$

$$A = \frac{2}{12} S$$

$$A = \frac{1}{6} S - (3)$$

Putting eq (1), (2) & (3) in eq (A), we get:

$$\text{Total} = \frac{1}{6} S + \frac{1}{4} S + S$$

As Total amount = 500

$$500 = \frac{1S}{6} + \frac{1S}{4} + S, \text{ Taking LCM}$$

$$500 = \frac{2S + 3S + 12S}{12}$$

$$500 = \frac{17}{12} S, \text{ Di Multiplying 12 on both sides}$$

$$17S = 6000, \text{ Dividing 17 on both sides:}$$

$$S = 352.9$$

P.W
2   6-4
2   3-2
3   3-1
1-1
2 x 2 x 3 = 12
500
x 12
6000
6000

Finding share of Mariam:

From eq ②:  $M = \frac{1}{4} S$

Putting value of  $S$ :  $M = \frac{1}{4} (352.9)$

$M = 88.225$

Finding share of Arham:

From eq ①:  $A = \frac{2}{3} (M)$

Putting value of  $M$ :  $A = \frac{2}{3} (88.225)$

$A = 176.45$

$A = 58.82$

Error Check:  $A + M + S = 500$

$58.82 + 88.225 + 352.9 = 500$

$499.945 \text{ OR } 500 = 500$

RESULT:- a) Share of Arham = Rs. 58.82

b) Share of Mariam = 88.225

c) Share of Sarim = 352.9

### CS 2018 Q# 6 (c):-

Tahir started a business with a capital of Rs. 15,000. After 5 months Umar also joined him with an investment of Rs. 30,000. At the start of 9<sup>th</sup> month, Usman joined them by investing Rs. 45,000. At the end of the year they earned a profit of Rs. 406,000. Find the share of each one.

GIVEN:- Investment by Tahir (T) = 15,000 Rs

Investment by Umar (U) after 5 months = Rs. 30,000

Investment by Usman (Us) at start of 9<sup>th</sup> month = Rs. 45,000

Profit at the end of year = 406,000 Rs.

REQUIRED:- a) Share of Tahir = ?

b) Share of Umar = ?    c) Share of Usman = ?

Question:-

→ Finding ratio of their profit: The ratio of their profit will depend on the amount of investment and time period (in months):

$$\text{Tahir's profit} : \text{Umar's profit} : \text{Usman's profit}$$

$$(15000 \times 12) : (30000 \times 7) : (45000 \times 4)$$

$$180000 : 210000 : 180000 \quad (\div \text{by } 3000)$$

$$6 : 7 : 6$$

→ Finding shares on profit: Adding the ratios:

$$6 + 7 + 6 = 19 \text{ parts.}$$

$$a) T's \text{ share} = \frac{6}{19} (406000)$$

$$= \frac{2436000}{19}$$

$$T's \text{ share} = 128210.5 \text{ Rs.}$$

$$b) U's \text{ share} = \frac{7}{19} (406000)$$

$$= \frac{2842000}{19}$$

$$U's \text{ share} = 149578.9 \text{ OR } U's \text{ share} = 149579 \text{ Rs.}$$

$$c) Us' \text{ share} = \frac{6}{19} (406000)$$

$$= \frac{2436000}{19}$$

$$Us' \text{ share} = 128210.5 \text{ Rs.}$$

$$\text{Error Check: } 128210.5 + 149579 + 128210.5 = 406,000$$

RESULT:- a) Tahir's share = Rs. 128210.5

b) Umar's share = 149578.9 or 149579 Rs

c) Usman's share = 128210.5 Rs.

15000	30000
x 12	x 7
180000	210000
45000	45000
x 4	x 4
180000	180000
406000	
x 6	
2436000	
406000	
x 7	
2842000	

5

## CSS 2018 Q#6 (d):-

A man left his property of Rs. 640,000. A debt of Rs. 40,000 was due to him and Rs. 5,000 was spent on his burial. Distribute the amount between his widow, one daughter and two sons according to Islamic law.

GIVEN:- • Total amount of property = Rs. 640,000

• Debt = Rs. 40,000

• Spent on burial = 5,000

REQUIRED:- a) Share of widow = ?    b) Share of daughter = ?

c) Share of 1<sup>st</sup> son = ?

d) Share of 2<sup>nd</sup> son = ?

Solution:-

→ Excluding the amount of debt and burial expenditure from total amount: Debt + Burial expenditure = 40,000 + 5,000 = 45,000

$$\text{So, } 640,000 - 45,000 = 595,000$$

→ Finding ratio for share: According to Islamic law, the ratio of share is:

Widow : Daughter : 1<sup>st</sup> son : 2<sup>nd</sup> son.

$$\frac{1}{8} : 1 : 2 : 2$$

→ Finding shares: Adding ratios =  $\frac{1}{8} + 1 + 2 + 2$

$$\text{Taking L.C.M} = \frac{1+8+16+16}{8} = \frac{41}{8}$$

$$a) \text{ Widow's share} = \frac{\frac{1}{8}}{\frac{41}{8}} (595,000)$$

$$= \frac{1}{8} \times \frac{8}{41} (595,000)$$

=

2) Finding widow's share: According to Islamic law, widow's share is  $\frac{1}{8}$ , So:

$$\text{Widow's share} = \frac{1}{8} (595,000)$$

$$\text{Widow's share} = 74,375 \text{ Rs}$$

By excluding widow's share: Total <sup>amount</sup> share = 595,000 - 74,375

	R.H
	640000
	45000
	595000
	74375
8	595000
	56
	35000
	32
	3000
	595000
	- 74375
	520625
	56
	40
	10

New total amount = Rs. 520625

→ Finding daughters and sons share:- According to Islamic law, a son has 2x more share than daughter, So:

1<sup>st</sup> son : 2<sup>nd</sup> son : Daughter

2 : 2 : 1

Adding ratios:  $2+2+1=5$

b) Daughter's share =  $\frac{1}{5} (520625)$

Daughter's share = 104125 Rs.

c) 1<sup>st</sup> son's share =  $\frac{2}{5} (520625)$   
= 208250

1<sup>st</sup> son's share = 208250 Rs.

d) 2<sup>nd</sup> son's share = 208250 Rs. as both have same share.

Error check:  $74375 + 104125 + 208250 + 208250$   
= 595,000.

RESULT:- a) Widow's share = Rs. 74375

b) Daughter's share = Rs. 104125

d) 2<sup>nd</sup> son's share = Rs. 208250

c) 1<sup>st</sup> son's share = Rs. 208250

R.W  
104125  
520625  
5  
10625  
20  
2125  
5  
10625  
10  
520625  
x 2 25  
1041250  
208250  
5206250  
110  
41250  
40  
1250  
10  
250  
25  
1000

good answers!!!

keep practicing!