

RATIOS & PERCENTAGES FROM CSS PART PAPERS:-

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CSS 2017 Q# 8 (a):-

Divide Rs. 500 between Arham, Mariam and Sarim so that Arhaman 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
1000
500 x
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: $A = \frac{2}{3} (88.225)$

$A = \frac{176.45}{3}$

$A = 58.82$

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 9th 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 9th 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 = ?

Solution:-

→ 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:

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

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

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

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

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

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

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

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

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

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

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

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	

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 1st son = ?

d) Share of 2nd son = ?

Solution:-

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

So, 640,000 - 45,000 = 595,000

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

Widow : Daughter : 1st son : 2nd son.

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

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

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

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

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

=

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

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

Widow's share = 74,375 Rs

By excluding widow's share: Total ^{amount} 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:

1st son : 2nd 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) 1st son's share = $\frac{2}{5} (520625)$
= 208250

1st son's share = 208250 Rs.

d) 2nd 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 c) 1st son's share = Rs. 208250

d) 2nd son's share = Rs. 208250.

R.W
104125
520625
5
10625
20
225
5
125
10
520625
x 2 25
1041250
208250
5206250
110
41250
40
1250
10
250
25
1100