

CSS 2017 Q8(A)

Date: _____

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

Solution =

$$\text{Arham got} = \frac{2}{3} \text{ of Marium}$$

$$\text{Marium got} = \frac{1}{4} \text{ of Sarim}$$

$$\text{Let Sarim be} = x \dots \dots \text{eq. (i)}$$

Now,

$$\text{Marium got} = \frac{1x}{4} \dots \dots \text{eq. (ii)}$$

$$\text{Arham got} = \frac{2}{3} \left(\frac{1x}{4} \right) = \frac{2x}{12} = \frac{1x}{6}$$

$$\text{Total Amount} = 500$$

$$\text{Total Parts} = \frac{x^1}{1} + \frac{1x^2}{6} + \frac{1x^3}{4} =$$

$$\text{Total Parts} = \frac{12x + 2x + 3x}{12} = \frac{17x}{12}$$

Sarim's Share:

$$\frac{17x}{12} = 500$$

12

$$17x = 500 \times 12$$

$$17x = 6000$$

$$x = \frac{6000}{17}$$

17

$$x = 353$$

$$\text{Marium's Share} = \frac{1}{4} (353)$$

$$= \frac{353}{4}$$

$$= 88$$

$$\text{Asham's Share} = \frac{1}{6} (353)$$

$$= \frac{353}{6}$$

$$= 59$$

CSS 2018 - Q6(D)

A man left his property of Rs. 640,000. A debt of Rs. 40,000 was due to him and Rs. 5000 was spent on his burial. Distribute the amount between his widow, one daughter & two sons according to Islamic law.

Sol :- Total Property left = Rs. 640,000

Debt = Rs. 40,000

Burial expenses = Rs. 5000

Share of Sons = 2 part each son

Share of Daughter = 1 part each daughter

Share of Widow = $\frac{1}{8}$

Amount left after debt & burial =
 $640,000 - 45,000 = 595,000$.

Share of widow = $595,000 \times \frac{1}{8} = 74,375$

Amount Remaining is = $595,000 - 74,375 = 520,625$

Now, Ratios of Share:

$$2 + 2 + 1 = 5$$

Share of sons =

$$\frac{4}{5} \times 520,625 = 416,500.$$

Share of each son =

$$\frac{416500}{2} = 208,250$$

Share of one daughter =

$$\frac{1}{5} \times 520,625 = 104,125.$$

Q:1 When 40% of a number is added to 42, the result is the number itself. Find the number:

$$\text{Solution} = \frac{40}{100}x + 42 = x$$

$$\frac{2x^1 - x^5}{5 \quad 1} = -42$$

$$\frac{2x - 5x}{5} = -42$$

$$\frac{-3x}{5} = -42$$

$$3x = 42 \times 5$$

$$3x = 210$$

$$x = \frac{210}{3}$$

$$x = 70$$

Q:2 A metal bar weighs 8.15 ounces. 93% of the bar is silver. How many of silver are in the bar?

Solution =

$$\frac{93}{100} (8.15)$$

$$0.93 \times 8.15$$

$$7.57 \text{ ounces}$$

7.57 ounces of silver is present in metal bar.

Q4: A student earned a grade of 80% in math that had 20 problems. How many problems in that test did the student answer correctly?

Solution =

$$\frac{80}{100} \times 20$$

16 problems

16 problems were answered accurately by the student.

Q5: 1 kg of tea and 4 kg of sugar cost Rs. 35 but if sugar rises by 50% and tea 10% they would cost Rs. 42.50. Find the price per kg sugar.

Solution:

$$\text{Total Parts} = 1 + 4 = 5$$

$$\text{Total Cost} = 35$$

$$\text{Price of tea} = \frac{1}{5} \times 35 = \text{Rs. } 7$$

$$\text{Price of sugar} = \frac{4}{5} \times 35 = \text{Rs. } 28$$

$$\text{Increase in price of sugar} = \frac{28 \times 50}{100} = \text{Rs. } 14$$

$$\text{New price of sugar} = 28 + 14 = 42$$

$$\text{to find per kg} = \frac{42}{4} = \text{Rs. } 10.5$$

If there were 4 kg of sugar, then after increasing by 50%, each kg of sugar costs Rs. 10.5.

Practice Problems⁶

Date: _____

Q1: 14 cows eat 63kg grass in 18 days.
How many cows will eat 770kg grass in 28 days?

Solution =

Cows	Quantity Of Grass	Days
↑ 14	↑ 63kg	↓ 18
↑ x	↑ 770 kg	↓ 28

$$x = \frac{385}{770} \times \frac{18}{14}$$

$$x = \frac{55}{385} \times 2 \times 14$$

$$x = 55 \times 2$$

$$x = 110$$

110 cows will eat 770 kg of grass in 28 days.

Q2: A food factory manufactures 560 fans in 7 days with 20 machines. How many fans would be manufactured in 12 days with 18 machines?

Solution:

Fans	Days	Machines
↑ 560	↑ 7	↑ 20
↑ x	↑ 12	↑ 18

$$\frac{x}{560} = \frac{\overset{3}{12} \times \overset{4}{18}}{\underset{2}{17} \times \underset{2}{20}}$$

$$x = \frac{27 \times \overset{280}{560}}{\underset{17}{34}}$$

$$x = \frac{7560}{17} = 444.7 \approx 445$$

$$x = 445$$

445 machines would be manufactured.

Q3: The cost of 16 packets of salt, each weighing 900 grams is 84 dollars. What will be the cost of 27 packets of salt each weighing 1kg?

Solution:

Packets of Salt	Weight	Cost in dollars
↑ 16	↑ 900 gm	84 ↑
↓ 27	↓ 1kg = 1000 gm	x ↑

$$\frac{x}{84} = \frac{\overset{3}{27} \times \overset{5}{1000}}{\underset{8}{16} \times \underset{1}{900}}$$

$$x = \frac{3 \times 5 \times \overset{21}{84}}{\underset{2}{8}}$$

$$x = \frac{15 \times 21}{2} = \frac{315}{2}$$

$$x = 157.5 \approx 158 \text{ dollars}$$

The cost of 27 packets of salt will be 158 dollars.

Question: 4 If 270 kg of corn would feed 42 horses for 21 days, for how many days would 360 kg of it feed ~~for~~ 21 horses?

Solution:

Corn	Horses	Days
↑ 270 kg	42 ↓	21 ↑
↑ 360 kg	21 ↓	x ↑

$$\frac{x}{21} = \frac{42}{21} \times \frac{360}{270}$$

$$x = \frac{8 \times 21}{1} = 56$$

$$x = 56 \text{ days}$$

For 56 days 21 horses can feed on 360 kg