Quiz Date: 20th February 2020

Q1. In a class the number of boys and that of the girls are in the ratio of 3 : 4. If the number of boy is increased by 15% and that of girls is increased by $\frac{175}{3}$%. What will be the new ratio of the number of boys to that of girls?

(a) 197 : 375

(b) 163 : 362

(c) 217 : 341

(d) Data inadequate

(e) 207 : 380

Q2. In two alloys, copper and zinc are present in the ratios of 4:1 and 1:3. 10 kg of 1st alloy 16 kg of 2nd alloy and some of pure copper are melted togther. An alloy was obtained in which the ratio of copper to zinc was 3:2. Find the weight of the new alloy.

(a) 34 kg

(b) 35 kg

(c) 36 kg

(d) 30 kg

(e) 32 kg

Q3. Rs. 5625 is to be divided among A, B and C, so that A may receive (1/2) as much as B and C together receive and B receives (1/4) of what A and C together receive. Find out difference between share of C and Share of A?

(a) Rs. 640

(b) Rs. 750

(c) Rs. 1200

(d) Rs. 960

(e) Rs. 840

Q4. The percentage of wheat in the mixture of wheat and barley is 62.5%. if some quantity of rice is added with the 760-quintal mixture of wheat and barley then quantity of rice is 15% of the difference of quantity of wheat and barley in the final mixture. Find out the quantity of rice in the final mixture?

(a) 42.5 quintals

(b) 29.5 quintals

(c) 36.5 quintals

(d) 28.5 quintals

(e) 26.5 quintals

Q5. In an alloy, zinc and copper are in the ratio 1 : 2. In the second alloy the same elements are in the ratio 2 : 3. In what ratio should these two alloys be mixed to form a new alloy in which the two elements are in ratio 5 : 8?

(a) 7 : 11

(b) 3:10

(c) 5 : 11

(d) 9:11

(e) 4 : 9

Q6. 6 litres are drawn from a cask full of wine and it is then filled with water. 6 litres of the mixture are drawn and the cask is again filled with water. The quantity of wine now left in the cask is to that of the water in it as 121 : 23. How much does the cask hold?

(a) 54 litres

(b) 62 litres

(c) 70 litres

(d) 72 litres

(e) 66 litres

Q7. Three equal glasses are filled with mixtures of milk and water. The proportion of milk and water in each glass is as follows. In the first glass as 5 : 3, in the second glass as 3 : 2 and in the third as 7 : 4. The contents of the three glasses are emptied into a single vessel. What is the proportion of milk and water in it?

(a) 819 : 401

(b) 170 : 313

(c) 273 : 167

(d) 743 : 155

(e) none of these

Q8. A vessel contains a mixture of Apple, Guava and Lichi juices in the respective ratio of 4 : 6 : 5. 15 litres of this mixture is taken out and 8 litres of Apple juice and 2 litres of Guava juice is added to the vessel. If the resultant quantity of Apple juice is 10 litres less than the resultant quantity of Guavas juice, what was the initial quantity of mixture in the vessel?

(a) 120 liters

(b) 150 liters

(c) 105 liters

(d) 135 liters

(e) 90 liters

Q9. Monthly salaries of Rakhi and Sanjay are in the respective ratio of 4 : 5. Rakhi, from her monthly salary, gives $\frac{5}{8}$th to her mother. 20% towards her sister's tuition fees, 12.5% towards

a loan and she shops with the remaining amount which was Rs. 1280. What is the monthly salary of Sanjay?

(a) Rs. 28000

(b) Rs. 24000

(c) Rs. 25600

(d) Rs. 32000

(e) Rs. 30000

Q10. The price of a diamond is directly proportional to the square of its weight. The diamond broke in four part in such a way that the weights of those parts were in the ratio of 1 : 2 : 3 : 4. If the total price of the diamond was decreased by Rs. 70,000, then what was the price (in Rs.) of the original diamond ?

(a) 1,00,000

(b) 2,00,000

(c) 3,00,000

(d) 4,00,000

(e)none of these

Q11. Rajeev has average earning of Rs 600 per month except January, April, July and October in each of which he earns $\frac{3}{2}$ times of average earning of remaining months. Due to this his savings in January, April, July and October each becomes $\frac{5}{4}$ times than Average savings of remaining months which is Rs. 400 per month. Find the average expenditure per month of Rajeev?

(a) Rs. 266.66

(b) Rs. 250

(c) Rs. 233.33

(d) Rs. 433.33

(e) None of these

Q12. A milkman made a mixture by mixing milk and water in the ratio 3 : 5 and sold $33\frac{1}{3}\%$ of the mixture. If he added 80 ℓ water in the remaining mixture, ratio of milk to water becomes 3 : 11, then Find the initial quantity of mixture?
(a) 175ℓ
(b) 145ℓ
(c) 180ℓ
(d) 160ℓ
(e) 225ℓ

Solutions

S1. Ans. (e)

Sol.

Let the no. of boys be 3x and the number of girls be 4x.

No. of boys is increased by 15% = $\frac{3x\times115}{100} = \frac{69x}{20}$

No. of girls is increased by $\frac{175}{3}\%$ = $\frac{4x\times475}{300} = \frac{19x}{3}$

Required ratio = $\frac{69x}{20} : \frac{19x}{3} = 207 : 380$

S2. Ans. (b)

Sol.

Let the amount of pure copper = x kg.

Pure copper + copper in 1st alloy + copper in 2nd alloy

= Copper in new alloy

$\Rightarrow x + \frac{4}{5}\times 10 + \frac{1}{4}\times 16 = \frac{3}{5}(10 + 16 + x)$

$\Rightarrow 12 + x = \frac{3}{5}(26 + x)$

$\Rightarrow x = 9$ kg.

∴weight of new alloy = 10 + 16 + 9 = 35 kg.

S3. Ans. (b)

Sol.

A+B+C = 5625

B+C = 5625 – A

$A = \frac{1}{2}(5625 - A)$

$A = 1875$

B + C = 3750

Also $B = \frac{1}{4}(1875 + C)$

B = 1125

C = (5625 – (1875+1125))

= 2625

Required difference = 2625 – 1875 = 750

S4. Ans. (d)

Sol.

In 760 quintal mixture

Wheat $\frac{62.5}{100} \times 760 = 475$ quintal

Barley = 760 – 475 = 285 quintal

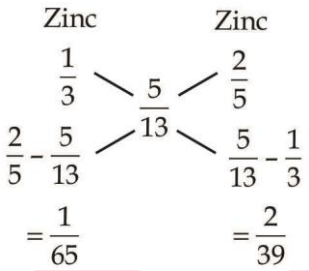
Let x quintal of rice added

$\frac{x}{190} \times 100 = 15$

$x = 28.5$ quintals

S5. Ans. (b)

Sol.



Required ratio = $\frac{\frac{1}{65}}{\frac{2}{39}} = \frac{3}{10}$

S6. Ans. (d)

Sol.

Let initially Cask holds V litres of wine

$\frac{\text{Amount of left of wine}}{\text{Initial Amount of wine}} = \left(1 - \frac{6}{V}\right)^2$

$\frac{121}{121+23} = \left(1 - \frac{6}{V}\right)^2$

$\frac{121}{144} = \left(1 - \frac{6}{V}\right)^2$

$\frac{11}{12} = 1 - \frac{6}{V}$

$\frac{6}{V} = \frac{1}{12}$

$V = 72$ litres

S7. Ans. (c)

Sol.

	Milk	Water
Glass 1 (3 : 1)	$\frac{5}{8}V$	$\frac{3}{8}V$
Glass 2 (5 : 3)	$\frac{3}{5}V$	$\frac{2}{5}V$
Glass 3 (9 : 7)	$\frac{\frac{7}{11}V}{\frac{819}{440}V}$	$\frac{\frac{4}{11}V}{\frac{501}{440}V}$

Ratio of milk to water in single vessel

= 819 : 501

= 273 : 167

S8. Ans. (d)

Sol.

A : G : L
4 : 6 : 5

Now, $A : G : L = \left(4x - \frac{4}{15} \times 15 + 8\right) : \left(6x - \frac{6}{15} \times 15 + 2\right) : \left(5x - \frac{5}{15} \times 15\right)$

$= (4x + 4) : (6x - 4) : (5x - 5)$

$\therefore 6x - 4 - 4x - 4 = 10$

$2x - 8 = 10$

$x = 9$

$\therefore$ Initial quantity of mixture in the vessel $= 9 \times 15$

$= 135$ litres

S9. Ans. (d)

Sol.

Let monthly salary of Rakhi was Rs. 400x.

ATQ

Remaining amount $= 400x - \left(\frac{5}{8} \times 400x + \frac{20}{100} \times 400x + \frac{12.5}{100} \times 400x\right) = 1280$

$= 400x - 380x = 1280$

$20x = 1280$

So, Rakhi's monthly salary $= 400x = \frac{1280}{20} \times 400 = Rs.25600$

So, Sanjay's monthly salary $= \frac{25600}{4} \times 5$

$= Rs.32000$

S10. Ans. (a)

Sol.

Let the weights of diamond pieces=x,2x,3x,4x

total weight = $10x$

Let price of original diamond = $(10x)^2y = 100x^2y$

Total price of pieces = $(x^2 + (2x)^2 + (3x)^2 + (4x)^2)y$

$= 30x^2y$

Reduction = $70x^2y = 70000$

x^2y = 1000,

Original diamond price = 100 (1000) = Rs 100000

S11. Ans. (a)

Sol.

Total earning $= 4\left(\frac{3}{2} \times 600\right) + 8 \times 600$

$= 3600 + 4800$

$= 8400$ Rs.

Total saving $= 4 \times \frac{5}{4} \times 400 + 8 \times 400$

= 2000 + 3200

= 5200 Rs.

$\therefore$ Total expenditure $= 8400 - 5200$

= 3200

$\therefore$ Required average expenditure $= \frac{3200}{12}$

= 266.66 Rs.

S12. Ans.(d)
Sol.
Let total mixture of milk and water be 100x
$\therefore$ Amount of milk in mixture $= \frac{3}{8} \times 100x = 37.5x$
Amount of water in mixture = 100x – 37.5x = 62.5x
Amount of milk left in mixture after selling $33\frac{1}{3}\%$ of mixture
$= 37.5x - 37.5x \times \frac{1}{3}$
= 37.5x – 12.5x
= 25x
Amount of water left in mixture after selling $33\frac{1}{3}\%$ of mixture

$= 62.5x - 62.5x \times \frac{1}{3}$

$= \frac{125}{3}x$

ATQ,

$\Rightarrow \frac{25x}{\frac{125x}{3} + 80} = \frac{3}{11}$

$\Rightarrow 275x = 125x + 240$

$\Rightarrow 150x = 240$

$\Rightarrow x = \frac{240}{150}$

$\Rightarrow x = 1.6$

$\Rightarrow$ Initial quantity of mixture = $100x = 100 \times 1.6 = 160\ \ell$