13 September 2023   08:30

On a Big Billion day sale ,Google flagship mobile phone was available at a discount of 20% on Flipkart. The customers who are purchasing for the first time on Flipkart will get additional cashback of 10 % on the billing amount . Suraj being 1st time user of Flipkart purchases the mobile phone for Rs. 36000,find the actual cost price of the mobile phone.

A   Rs. 50000

B   Rs. 45000

C   Rs. 52250

D   Rs. 47250

E   None of these

$100\% x - 20\% x$

$100\% - 10\% = 90\%$

$72\% x = 36000$

$x = \dfrac{36000}{72} \times 100$

$= 50000$

Original price $= x$

Price after 1st discount

$= 80\% x = y$

Price after cashback

$= 90\% y = 90\% \times 80\% x$

$= \dfrac{90}{100} \times 80\% x$

$= 72\% x$

Cost of a pen , marker and sharpener is rupees 15, 18 and 5 respectively. To increase his sales the shopkeeper sells sets of 5 pens and 3 markers for Rs. 100. Find the amount paid by the customer if he buys 15 pens, 10 marker and 2 sharpeners.

A   Rs. 378

B   Rs. 356

C   Rs. 328

D   Rs. 367

E   None of these

5 Pens + 3 markers = 100

15 Pens + 9 " = 300 ✓

1 marker = 18 ✓

2 sharpners = 10 ✓

_____

328

Rashmi and Pallavi can make a carpet in 3 days and 12 days more than the time taken if both of them worked together. Find the time in which Rashmi can make the carpet alone.

- A) 9 days
- B) 6 days
- C) 12 days
- D) 8 days
- E) None of these

Handwritten work:

y

I complete a work in 10 days

In 1 day

I will do $\frac{1}{10}$ th

In 1 day

Rashmi → $\frac{1}{x+3}$ of the work

Pallavi → $\frac{1}{x+12}$ " " "

$R + P → \frac{1}{x}$

$R + P → \frac{1}{x+3} + \frac{1}{x+12}$

$R + P → x$ days

$R → x+3$ days

$P → x+12$ days.

$\frac{1}{12} + \frac{1}{21} = \frac{33}{\cancel{12} \times 21}^{\frac{11}{4}}$

$\frac{1}{x+3} + \frac{1}{x+12} = \frac{1}{x}$

$\frac{1}{9} + \frac{1}{18} = \frac{3}{18} = \frac{1}{6}..$

$\frac{x+12+x+3}{(x+3)(x+12)} = \frac{1}{x}$

$(2x+15)x = x^2 + 15x + 36$

$2x^2 + 15x = x^2 + 15x + 36$

$x^2 = 36$

$x = 6$

A cruise was 100 km from the nearest shore when the captain discovered a leak which admits 5 tons of water every 10 minutes 120 tons would suffice to sink the cruise. The captain came up with a temporary solution by fixing a pump which can throw 10 tons of water in an hour. Find the average sailing rate of the cruise that may just allow cruise to reach the nearest shore

- A) 14.28 km/hr
- B) 20 km/hr
- C) 16.67 km/hr
- D) 6 km/hr
- E) None of these

Handwritten work:

$\frac{5}{10} \times 60 = 30$

$30 t/hr.$

$↓$

$→ 10 t/hr.$

Speed $= \frac{100 \text{ km}}{6 \text{ hrs.}} = 16.67$ km/hr

Net rate of water inflow

$= 30 - 10 = 20$ Tons/hr.

120 Tons → 6 hrs

Incomes of John and Kelvin are in the ratio 4 : 7 and their spending are in the ratio 6 : 11. If John saves one third of his income, then what will be the ratio of their savings.

A 12 : 13

B 13 : 12

C 18 : 19

D 12 : 19

E None of these

Handwritten work:

$$\frac{4}{3} : \frac{19}{9 \cdot 3} \qquad 12 : 19$$

$$7x - 11y$$
$$= 7x - 11 \times \frac{4x}{9}$$
$$= \frac{63x - 44x}{9}$$

$$K. \quad \frac{19x}{9}$$

$$\frac{x}{y} = \frac{\frac{3}{2} \times 3}{4 \times 2} = \frac{9}{4}$$

$$y = \frac{4x}{9}$$

J   K.

$4x \leftarrow$ $7x$
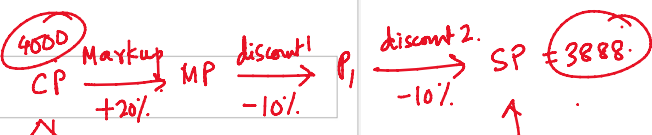
$6y$ $11y$

$4x - 6y$ $7x - 11y$

$\frac{4x}{3}$

$4x - 6y = \frac{4x}{3}$

$4x - \frac{4x}{3} = 6y$

$4x \times \frac{2}{3} = 6y$

Incomes
Spendings.
Savings
= Income - Spending.

A shopkeeper marked a product, 20% above the cost price and sold the product for Rs. 3888 by giving two successive discounts of 10% each. Find the cost price of the product and the loss percentage of the shopkeeper.

A 4200, 7.4%

B 4000, 2.8%

C 4100, 5.1%

D 4050, 4%

E None of these

Handwritten work:

$x \times 1 = \frac{x \times 100}{100} = 100\% x$

$$Loss\% = \frac{112}{4000} \times 100$$

4000 CP $\xrightarrow{Markup \; +20\%}$ MP $\xrightarrow{discount1 \; -10\%}$ P_1 $\xrightarrow{discount 2 \; -10\%}$ SP £3888.

$x + 20\% x = 100\% x + 20\% x = 120\% x$

CP = x.   MP = 120% x. P_1 = 90% MP

$$\frac{9}{10} \times \frac{9}{10} \times \frac{6}{5} x = 3888$$

$$x = 3888 \times 500$$
$$= \frac{432 \times 500}{9 \times 6} = \frac{48 \times 500}{6} = 4000$$

SP = 90% P_1

SP = 90% × 90% MP = 90% × 90% × 120% x.

Siraj and Hiten started a business with investment of Rs. 15000 and Rs. 18000, respectively. After one year, Siraj increased his investment by 10% while Hiten decreased his investment by 10%. At the end of two years, total profit made by the business is Rs. 13140. Find the share of profit of Hiten.

A	Rs. 6220
B	Rs. 6840
C	Rs. 6280
D	Rs. 7480
E	Rs. 6530

Handwritten working:

Share of profit is in the ratio of the total investment

Total investment = investment × no of mths

```
         S              H
      15000 ←        18000
       ×12            ×12
     180000         216000

after 1 yr.
      16500         16200
       ×12           ×12
     198000        194400

             378000      410400
```

$219x = 13140$
$x = \dfrac{13140}{219} = 60$ for 12 mths
$= 75$

$114 \times 60 = 6840$

$S = 105x$, Total investment
$H = 114x$ $219x$

$\dfrac{S}{H} = \dfrac{3780}{4104} = \dfrac{945}{1026} = \dfrac{105}{114}$

$\dfrac{S}{H} = \dfrac{945}{1026} = \dfrac{105}{114}$

```
  15000        18000
 + 1500       - 1800
  16500        16200
```

A farmer mixes two varieties of rice of price Rs. 72 per kg and Rs. 48 per kg in the ratio of 1: 2. He sold the mixture for Rs. 4200 to earn a profit of 25%. Find the quantity of rice of cost Rs. 72 per kg in the mixture.

A	20 Kg
B	30 kg
C	40 kg
D	50 kg
E	60 kg

Handwritten working:

```
         A           B
       72/kg       48/kg
       1 kg =       2 kg
        72    +      96     = 168
         1    +       2     =  3 kg
```

$70 \, Rs/kg \times x \, kg = 4200$ Total price

$x = \dfrac{4200}{70} = 60$ Total qty

$20 : 40$

Cost of mixture $= \dfrac{168}{3}$ Rs/kg

$CP = 56$ Rs/kg

$SP = 125\% \times CP = \dfrac{5}{4} \times 56 = 70$ Rs/kg

$$= 70 . \text{Rs}/kg$$

A man deposited 'x'% of his monthly salary which is Rs. 60000 at 13% simple interest. If the accumulated amount for the sum deposited after 3 years was Rs. 29190, then find the value of 'x'.

A) 40

B) 35 ✓

C) 45

D) 50

E) None of these

$$P = \frac{x}{100} \times 60000$$

$$= 600x.$$

$$A = P + I$$
$$600x + 234x = 29190.$$
$$834x = 29190.$$

834
×35
29190.

800×30 = 24000

$$x =$$

Salary = 60000 /mth
P = x% × 60000 /mth.

$$I = \frac{PRT}{100} = \frac{x\% \times 60000 \times 13 \times 3}{100}$$

$$= \frac{x}{100} \times 600 \times 39$$

$$= 39 \times 6x = 234x.$$

Out of total students 100/3 % are in hostel A and remaining are in hostel B. If 20 students from hostel B are shifted to hostel A, then total students in hostel A becomes 50% of total students. If 20 students from hostel A are shifted to hostel B, then the total students in hostel A becomes what per cent of total students?

A) 26.34%

B) 16.67% ✓

C) 12.75%

$$\frac{100}{3}\%$$

$$= \frac{100}{3} \times \frac{1}{100} = \frac{1}{3}.$$

$$\frac{20}{} \times 100 = 16.67\%$$

Total = x.

A
$$\frac{x}{3} = 40$$
40-20.
$$\frac{x}{3}+20 = 20$$
$$= 50\% x.$$

B.
$$\frac{2}{3}x = 80$$
80+20
$$\frac{2}{3}x - 20. = 100$$

C 12.75%

D 20.67%

E None of these

3 workers Peroola, Rahul and Prashant can complete a piece of work in 6 days. Peroola takes 15 days less than Rahul to complete the same work. Find in how many days will Prashant complete the whole work alone with 75% of his original efficiency, if Rahul can complete the work alone in 35 days?

A $\dfrac{560}{37}$ days

B $\dfrac{499}{36}$ days

C $\dfrac{361}{17}$ days

D $\dfrac{555}{43}$ days

E None of these

The present average age of a group of 60 athletes is 50% more than the average age of the 60 athletes 5 years ago. The average age of the group will become Y, if two new athletes of 22 year and 38 years join the group. Find the value of Y.

A. 14.44

B. 17.54

C. 15.48

D. 16

E. None of these

Three friends A, B, and C started a business and invested in the ratio of 8: 6: 15. At the end of one year out of the total profit ofRs. 6000, A's share was Rs. 2000 which was Rs. 500 more than that of B's share. Find the ratio of time for which they had contributed their capitals?

A. 1:1:2

B. 5:5:3

C. 3:3:2

D. 6:6:5

E. None of these

The ratio of length of each equal side to third side of an isosceles triangle is 5 : 6. If the area of the isosceles triangle is 108 sq. cm and the third side of the triangle is equal to the diameter of a circle. What is be the area of the circle (in sq. cm)?

A 144π

B 36π

C 225π

D 81π

E None of these

Two motorboats A and B, start simultaneously from the two ends P and Q of a river in downstream and upstream respectively. The speed of the motorboat A in still water is 200% more than that of motorboat B. If the distance between P and Q is 120 Km and they meet each other after 5 hours then how long the motorboat A will take to travel 90 km in still water?

A 6 hours

B 5 hours

C 8 hours

D None of these

E Can't be determined

Tenali Ram purchased 150 chocolates for his 5 grandsons and distributed the chocolates in such a way that the number of chocolates received by each grandson is in arithmetic progression. The highest number of chocolates received by any one of them is 28 more than the lowest number of chocolates received by any one of them. What is the sum of highest number of chocolates received by any one of them and the lowest number of chocolates received by any one of them?

A 50

B 60

C 40

D 70

E None of these

Vicky invited some of his friends for a party. 20% of them came by car and 40% of the remaining came by Bike. The number of friends who came by bus is 50% more than that by car and if 36 friends came by auto then total how many friends came by Bike? (assume that all came by any one of the vehicles car, bike, bus or auto)

A   72

B   60

C   64

D   50

E   None of these

A and B start swimming simultaneously towards each other from the point P and Q respectively. After 12 hours, they meet each other after that A takes 6 hours 40 minutes more to reach the point Q . What is the ratio of the speed of A in still water to that of the speed of stream if it is given that the direction of flow of the river is from point P to Q and in still water the ratio of the speed of A to that of B is 7 : 5?

A   7 : 5

B   35 : 6

C   49 : 5

D   42 : 5

E   None of these