

Sutherland Aptitude Questions and Answers with Explanation



1. Rice worth Rs. 110 per kg and Rs. 95 per kg are mixed with a third variety in ratio 1:1:2. If the mixture is worth Rs. 115 per kg, the price of the third variety per kg will be

- A. 137.5
- B. 147.5
- C. 117.5
- D. 127.5

Answer – D.127.5

Explanation:

First, two types of rice are mixed in 1:1 so the total cost for 2 kg of rice is 205, so average price = 102.5

So, $x - 115 = 12.5$, $x = 127.5$

2. There are three vessels each of 20-liter capacity is filled with a mixture of milk and water. The ratio of milk and water are 2:3, 3:4 and 4:5 respectively. All the vessels are emptied into the fourth vessel, then find the ratio of milk and water in the final mixture.

- A. 401/544
- B. 401/545
- C. 401/546
- D. 401/543

Answer – A. 401/544

Explanation:

Milk = $\frac{2}{5} + \frac{3}{7} + \frac{4}{9}$ and water = $\frac{3}{5} + \frac{4}{7} + \frac{5}{9}$

so the ratio will be 401/544

3. Two vessels contain milk and water in the ratio of 7:3 and 2:3 respectively. Find the ratio in which the contents of both the vessels must be mixed to get a new mixture containing milk and water in the ratio 3:2.

- A. 3:1
- B. 3:5
- C. 2:1
- D. 2:3

Answer – C. 2:1

Explanation:

let us assume that, the ratio be k:1

Sutherland Aptitude Questions and Answers with Explanation



then in the first mixture, milk = $7k/10$ and water = $3k/10$
and in the second mixture, milk = $2/5$ and water = $3/5$
 $[7k/10 + 2/5]/[3k/10 + 3/5] = 3/2$
 $K = 2$, so the ratio will be 2:1

4. In 80 liter mixture of milk and water, the water content is 40 percent. The trader gives 20 liters of the mixture to the customer and adds 20 liters of water to the mixture. What is the final ratio of milk and water in the mixture?

- A. 11:9
- B. 12:7
- C. 9:13
- D. 9:11

Answer – D. 9:11

Explanation:

milk = 48 and water = 32 litre initially
then milk = $48 - 20 \times 3/5 = 36$ and water = $32 - 20 \times 2/5 + 20 = 44$
so ratio = 9:11

5. 16, 9, 8, 13, 25, ?

- A. 63.5
- B. 68.5
- C. 64.5
- D. 59.5

Answer – A. 63.5

Explanation:

$16 * 0.5 + 1 = 9$
 $9 * 1 - 1 = 8$
 $8 * 1.5 + 1 = 13$
 $13 * 2 - 1 = 25$
 $25 * 2.5 + 1 = 63.5$

6. 3 8 27 76 ? 696 2099

- A. 275
- B. 255
- C. 245
- D. 235

Sutherland Aptitude Questions and Answers with Explanation



Answer – D. 235

Explanation:

$$3 * 3 - 1 = 8$$

$$8 * 3 + 3 = 27$$

$$27 * 3 - 5 = 76$$

$$76 * 3 + 7 = 235.$$

7. 972 488 242 123 ? 31.75 13.875

A. 87.5

B. 59.5

C. 54.5

D. 69.5

Answer – B. 59.5

Explanation:

$$972 / 2 + 2 = 488$$

$$488 / 2 - 2 = 242$$

$$242 / 2 + 2 = 123$$

$$123 / 2 - 2 = 59.5$$

8. 52 54 28 30 ? 18 10

A. 18

B. 15

C. 14

D. 16

Answer – D. 16

Explanation:

$$52 / 1 + 2 = 54$$

$$54 / 2 + 1 = 28$$

$$28 / 1 + 2 = 30$$

$$30 / 2 + 1 = 16$$

9. A boat takes 25 hours for travelling downstream from point A to point B and coming back to point C midway between A and B. If the velocity of the stream is 5 km/hr and the speed of the boat in still water is 10 km/hr, what is the distance between A and B?

A. 146 km

B. 150 km

Sutherland Aptitude Questions and Answers with Explanation



- C. 100 km
- D. 122 km

Answer - B. 150 km

Explanation:

Downstream speed = $10+5 = 15$

Upstream speed = $10-5 = 5$

Now total time is 25 hours

If the distance between A and B is d , then distance $BC = d/2$

Now distance/speed = time, so

$$d/15 + (d/2)/5 = 25$$

Solve, $d = 150$ km

Therefore, the distance between A and B is 150km.

10. A boat takes 150 min less to travel 40 km downstream than to travel the same distance upstream. The speed of the stream is 4 km/hr. What is the downstream speed?

- A. 12 km/hr
- B. 10 km/hr
- C. 8 km/hr
- D. 16 km/hr

Answer - D. 16 km/hr

Explanation:

Let speed of boat in still water = x km/hr

So speed upstream = $x-4$, and speed downstream = $x+4$

Now given:

Time to travel 40 km downstream = time to travel 40 km upstream – $150/60$

$$\text{So } 40/(x+4) = 40/(x-4) - 5/2$$

$$8/(x-4) - 8/(x+4) = 1/2$$

$$x+4 - (x-4)/(x^2 - 16) = 1/16$$

solve, $x = 12$

so downstream speed = $12+4 = 16$

Therefore, the downstream speed is 16 km/hr

11. In a stream running at 2 km/hr, a motorboat goes 6 km upstream and back again to the starting point in 2 hours. Find the speed of boat in still water.

- A. 12 km/hr
- B. 8 km/hr
- C. 10 km/hr

Sutherland Aptitude Questions and Answers with Explanation



D. 9 km/hr

Answer - B. 8 km/hr

Explanation:

$$\text{Distance} = \text{time} * [B^2 - R^2] / 2*B$$

$$6 = 2 * [B^2 - 4^2] / 2*B$$

$$B^2 - 6B - 16 = 0$$

$$(B-8)(B+2) = 0$$

$$\text{So } B = 8$$

Therefore, the speed of the boat in still water is 8 km/hr.

12. Out of the total investment, A invested 1/4th, B invested 1/3rd of the remaining and C the remaining. B earned Rs 10,000 after a year. Find the yearly profit of all.

A. Rs 45,000

B. Rs 40,000

C. Rs 58,500

D. Rs 49,600

Answer - B. Rs 40,000

Explanation:

Let total investment = Rs x

Then A's = $(1/4)*x$

Remaining = 3/4th of x

So B's investment = $(1/3)*(3x/4) = x/4$

And C's = $x - (x/4 + x/4) = x/2$

so ratio of profits = $x/4 : x/4 : x/2 = 1 : 1 : 2$

so $1/4 * x = 10,000$

$x = 40,000$

Therefore, the yearly profit of all is Rs 40,000

13. A dealer sold two ACs at Rs. 5940 each. On selling one AC he gained 10% and on selling the other he lost 10%. Find the dealer's gain or loss percent?

A. 1% gain

B. 1% loss

C. 2% loss

D. 2% gain

Answer - B. 1% loss

Sutherland Aptitude Questions and Answers with Explanation



Explanation:

$$5940 = (110/100) * cp1, cp1 = 5400$$

$$5940 = (90/100) * cp2, cp2 = 6600$$

$$\text{So, CP} = 5400 + 6600 = 12000$$

$$\text{And selling price} = 5940 + 5940 = 11880$$

$$\% \text{ loss} = (120/12000) * 100 = 1$$

14. A shopkeeper buys 60 cycles and marks them at 20% above the cost price. He allows a discount of 10% on the market price for cash sale and 5% discount for credit sales. If three-fourths of the cycles are sold at cash and remaining for credit, the total profit is Rs. 11400. What is the cost price of a cycle?

- A. 2000
- B. 4000
- C. 1000
- D. 1500

Answer – A. 2000

Explanation:

$$\text{Marked price} = (120/100) * CP$$

$$\text{cash sales} = 45 \text{ and credit sales} = 15$$

$$(120/100) * cp * 90/100 * 45 + (120/100) * cp * 95/100 * 15 - 60 * cp = 11400$$

$$\text{Cost Price} = 2000$$

15. A man buys some quantity of rice for Rs 4800. He sells one-third of it at a profit of 10%. At what percent gain should he sell the remaining two-thirds so as to make an overall profit of 20% on the whole transaction?

- A. 15%
- B. 20%
- C. 25%
- D. 10%

Answer – C. 25%

Explanation:

$$(1/3) * 4800 * 110/100 + (2/3) * 4800 * (x/100) = (120/100) * 4800$$

$$x = 125 \text{ so he should sell the remaining at } 25\% \text{ profit}$$

16. P, Q, and R invest rupees 2000, 8000 and 10000 respectively in a business. At the end of the year, the balance sheet shows a loss of 40% of the initial investment. Find the share of loss of Q.

Sutherland Aptitude Questions and Answers with Explanation



- A. 2200
- B. 2800
- C. 3000
- D. 3200

Answer – D. 3200

Explanation:

Total loss after one year = $20000 \times 40/100 = 8000$

share of Q = $(4/10) \times 8000 = 3200$

17. 12 percent of the voters in an election did not cast their votes. In this election, there are only two candidates. The winner by obtaining 45% of the total votes and defeated his rival by 2000 votes. The total number of votes in the election

- A. 75000
- B. 100000
- C. 50000
- D. 125000

Answer – B. 100000

Explanation:

12% percent didn't cast their vote. 45% of total votes get by the winning candidates, so the remaining 43% will be scored by his rival. So,

$$(45/100 - 43/100) \times P = 2000$$

$$P = 100000$$

18. A number is first decreased by 25%. The decreased number is then increased by 20%. The resulting number is less than the original number by 40. Then the original number is?

- A. 100
- B. 200
- C. 300
- D. 400

Answer – D. 400

Explanation:

Let the number is a

$$a - (75/100) \times a \times (120/100) = 40$$

Then, we will get a = 400

Sutherland Aptitude Questions and Answers with Explanation



19. A sum of money lent at compound interest for 2 years at 20% per annum would fetch Rs.723 more if the interest was payable half yearly than if it was payable annually. The sum is _____

- A. Rs. 15000
- B. Rs. 30000
- C. Rs. 45000
- D. Rs. 20000

Answer – B. Rs. 30000

Explanation:

sum – Rs.x

C.I. compounded half yearly = $(\frac{4641}{10000})x$

C.I. compounded annually = $(\frac{11}{25})x$

$(\frac{4641}{10000})x - (\frac{11}{25})x = 723$

$x = 30000$

20. Leela takes a loan of Rs. 8400 at 10% p.a. compounded annually which is to be repaid in two equal annual installments. One at the end of one year and the other at the end of the second year. The value of each installment is?

- A. 4200
- B. 4140
- C. 4840
- D. 5640

Answer – C. 4840

Explanation:

$8400 = x \cdot (\frac{210}{121}) \Rightarrow 4840$