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PROFIT AND LOSS

CONCEPT :

Profit: If selling price is greater than Cost price, then excess of SP to CP is called Gain or Profit.

PROFIT = SELLING PRICE – COST PRICE

Loss: If selling price is less than Cost price, then excess of CP to SP is called Loss.

LOSS = COST PRICE – SELLING PRICE

Profit percentage formula:

The profit percent can be calculated as:

Profit % = 100 × Profit/Cost Price.

Percentage Loss:

The loss percent can be calculated as;

Loss % = 100 × Loss/Cost Price.

CONCEPT :

Cost Price (CP): The price, which is paid to acquire a product, is called cost price. All the overhead expenses (transportation, taxes etc.) are also included in the cost price.

- Cost Price = (100/(100+Gain%))*S.P
- Cost Price = (100/(100-Loss%))*S.P

Selling Price (SP): The sum of money, which is finally received for the product i.e. the price at which the product is finally disposed off is called the Selling price.

- Selling Price = ((100+Gain%)/100)*C.P
- Selling Price = ((100-Loss%)/100)*C.P

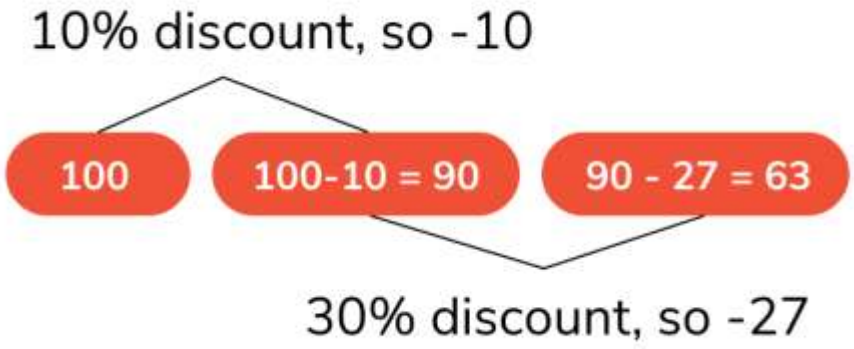
Marked Price (MP): The price, which is listed or marked on the product, is also known as quotation price/printed price/catalogue price/invoice price.

Profit and Loss Shortcuts:

Here is an **important shortcut to solve profit and loss problems** when it is based on Successive discounts.

If the first discount is a% and the second discount is b% then,

Total discount = (a + b - ab / 100) %



Question: 01

A trader mixes 26 kg of rice at Rs. 20 per kg with 30 kg of rice of other variety at Rs. 36 per kg and sells the mixture at Rs. 30 per kg. His profit percent is:

A. No profit, no loss
B. 5%
C. 7%
D. 15%

Answer: B

Explanation:

C.P. of 56 kg rice = Rs. (26 x 20 + 30 x 36) = Rs. (520 + 1080) = Rs. 1600.

S.P. of 56 kg rice = Rs. (56 x 30) = Rs. 1680.

Gain =(80/1600*100) % = 5%

Question: 02

If selling price is doubled, the profit triples. Find the profit percent?

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

Answer: A

Explanation:

Let the C.P be Rs.100 and S.P be Rs.x, Then

The profit is (x-100)

Now the S.P is doubled, then the new S.P is 2x

New profit is (2x-100)

Now as per the given condition;

=> 3(x-100) = 2x-100

By solving, we get

x = 200

Then the Profit percent = (200-100)/100 = 100

Hence the profit percentage is 100%

Question: 03

If the cost price of 12 pens is equal to the selling price of 8 pens, the gain percent is ?

A. 12%

B. 60%

C. 50%

D. 18%

Answer: C

Explanation:

Friends, we know we will need gain amount to get gain percent, right.

So lets get gain first.

Let the cost price of 1 pen is Re 1

Cost of 8 pens = Rs 8

Selling price of 8 pens = 12

Gain = 12 - 8 = 4

Gain% =(gain/cost*100)%

=((4/8)*100)%

=50%

Question: 04

If books bought at prices ranging from Rs. 200 to Rs. 350 are sold at prices ranging from Rs. 300 to Rs. 425, what is the greatest possible profit that might be made in selling eight books ?

A. 600
B. 1200
C. 1800
D. none of these

Answer: C

Explanation:

Least Cost Price = Rs. (200 * 8) = Rs. 1600.

Greatest Selling Price = Rs. (425 * 8) = Rs. 3400.

Required profit = Rs. (3400 - 1600) = Rs. 1800.

Question: 05

A man buys oranges at Rs 5 a dozen and an equal number at Rs 4 a dozen. He sells them at Rs 5.50 a dozen and makes a profit of Rs 50. How many oranges does he buy?

A. 30 dozens
B. 40 dozens
C. 50 dozens
D. 70 dozens

Answer: C

Explanation:

Cost Price of 2 dozen oranges Rs. (5 + 4) = Rs. 9.

Sell price of 2 dozen oranges = Rs. 11.

If profit is Rs 2, oranges bought = 2 dozen.

If profit is Rs. 50, oranges bought = (2/2) * 50 dozens = 50 dozens.

Question: 06

Bhajan Singh purchased 120 reams of paper at Rs 80 per ream. He spent Rs 280 on transportation, paid octroi at the rate of 40 paise per ream and paid Rs 72 to the coolie. If he wants to have a gain of 8 %, what must be the selling price per ream?

A. 90
B. 89
C. 87.48
D. 86

Answer: A

Explanation:

Total investment = Rs. (120 * 80 + 280 + (40/100) * 120 + 72).

= Rs. (9600 + 280+48 + 72) = Rs, 10000.

Sell price of 120 reams = 108% of Rs. 10000 = Rs. 10800.

Sell Price per ream = Rs. [10800/120] = Rs. 90.

Question: 07

Every year before the festive season,a shopkeeper increases the price of the product by 35% and then introduce two successive discount of 10% and 15% respectively.what is percentage loss and percentage gain ?

A. 3.27 % loss
B. 4.15 % loss
C. 3.27 % gain
D. 4.15 % gain

Answer: A

Explanation: 07

Let cp= 100,

35 % increase in sp=135

10 % discount in 135((135*10)/100)=13.5

so 1st sp=(135-13.5)=121.5, again 15 % discount in 1st sp((121.5*15)/100)=18.225

2nd sp=(121.5-18.225)=103.275,

so finally cp=100,sp=103.275 ,gain by 3.27%

Question: 08

A man bought an article and sold it at a gain of 5 %. If he had bought it at 5% less and sold it for Re 1 less, he would have made a profit of 10%. The C.P. of the article was

A. Rs 100
B. Rs 150
C. Rs 200
D. Rs 250

Answer: C

Explanation: 08

Let original Cost price is x

Its Selling price = (105/100) * x = 21x/20

New Cost price = (95/100) * x = 19x/20

New Selling price = (110/100)* (19x/20)= 209x/200

[(21x/20) - (209x/200)] = 1

=> x = 200

Question: 09

A shopkeeper sells one-third of his goods at a profit of 10%, another one-third at a profit of 20%, and the rest at a loss of 6%.What is his overall profit percentage ?

A. 6%
B. 8%
C. 12%
D. 10%

Answer: B

Explanation:

Let the shopkeeper buy 300g for Rs.300. Now he sells 100g for Rs.110, another 100g for Rs120, and the rest 100g for Rs94.

Therefore, the total amount he receives = Rs.110 + Rs.120 + Rs.94 = 324.

Therefore, the shopkeeper spends Rs.300 and gets back Rs.324.

Therefore, his profit percentage =(24/300)*100%

=8%

Question: 10

Cost of 3 cricket balls = cost of 2 pairs of leg pads.

Cost of 3 pairs of leg pads = cost of 2 pairs of gloves.

Cost of 3 pairs of gloves = cost of 2 cricket bats.

If a cricket bat costs Rs 54, what is the cost of a cricket ball.

A. Rs 12

B. Rs 14

C. Rs 16

D. Rs 18

Answer: C

Explanation:

3 pairs of gloves = 2 x 54 = 108 ; 1 pairs of gloves = 36

3 pairs of leg pads = 2 x 36 = 1 pairs of leg pads = 24

3 cricket balls = 2 x 24 = 48

cost of 1 cricket ball = 16;

Question: 11

A' sold an article to 'B' at a profit of 20%. 'B' sold the same article to 'C' at a loss of 25% and 'C' sold the same article to 'D' at a profit of 40%. If 'D' paid Rs 252 for the article, then find how much did 'A' pay for it?

A. Rs.196
B. Rs.210
C. Rs.200
D. Rs.235

Answer: C

Explanation: 11

Let the article costs 'X' to A

Cost price of B = 1.2X

Cost price of C = 0.75(1.2X) = 0.9X

Cost price of D = 1.4(0.9X) = 1.26X = 252

Amount paid by A for the article = Rs. 200.

Question: 12

A, B and C invest in the ratio of 3 : 4: 5. The percentage of return on their investments are in the ratio of 6 : 5 : 4. Find the total earnings, If B earns Rs. 250 more than A :

A. Rs. 6000
B. Rs. 7250
C. Rs. 5000
D. None of these

Answer: B

Explanation:

	A	B	C
investment	3x	4x	5x
Rate of return	6y%	5y%	4y%
Return	18xy/100	20xy/100	20xy/100

Total = (18+20+20) = 58xy/100

B's earnings - A's earnings = 2xy/100=250

Total earning =58xy/100=7250

Question: 13

By mixing two qualities of pulses in the ratio 2: 3 and selling the mixture at the rate of Rs 22 per kilogram, a shopkeeper makes a profit of 10 %. If the cost of the smaller quantity be Rs 14 per kg, the cost per kg of the larger quantity is:

A. Rs 23
B. Rs 25
C. Rs 24
D. None of these

Answer: C

Explanation:

Cost Price of 5 kg = Rs.(14*2 + x*3) = (28 + 3x).

Sell price of 5 kg = Rs. (22x5) = Rs. 110.

[{110 - (28 + 3x)}/(28 + 3x)]* 100 =10

[82-3x/28 + 3x]= 1 / 10

820 - 30x = 28 +3x

33x = 792

x = 24

Question: 14

Rahul went to purchase a Nokia mobile handset, the shopkeeper told him to pay 20% tax if he asked the bill. Rahul manages to get the discount of 5% on the actual sale price of the mobile and he paid the shopkeeper Rs. 3325 without tax. Besides he manages to avoid to pay 20% tax on the already discounted price, what is the amount of discount that he has gotten?

A. 750
B. 375
C. 875
D. 445

Answer: C

Explanation:

CP = 100, SP (with tax) =120

New SP = 100 - 5 = 95

Effective discount = 120 - 95 = 25

So, at SP of 95 ----> discount = 25

and at SP of 3325 -----> discount = 25/95*3325=875

Question: 15

If goods be purchased for Rs.450 and 1/3 is sold at a loss of 10%. At what gain % should the remainder is sold to has to gain 20% on the whole transaction?

A. 35%
B. 38%
C. 25%
D. 28%

Answer: A

Explanation:

Given the cost price of the articles = Rs. 450

To get overall 20% gain,

Total Selling Price = (20/100) x 450 = 540

One third of the CP = 1/3 x 450 = Rs. 150

But given 1/3 of articles are sold at 10% loss

S.P of 1/3 of articles = 90% of 150

= 90 x 150/100 = 135

Then, S.P on remaining 2/3 goods must be = 450 - 135 = 405 .....(1)

CP on remaining goods = 2/3 x 450 = 300 .....(2)

Profit = SP - CP = 405 - 300 = 105

Profit % = (105/300) x 100

THANK YOU