MBA PIONEER 2024

QUANTITATIVE APTITUDE

DPP: 8

Profit and Loss - 1

Q1 After providing a discount of 27% on the marked price of a textbook, it is sold for Rs. 876. If the seller sold it at the marked price, he could gain 60% profit. Then the cost price of the textbook is:

(A) 700 (B) 750
(C) 800 (D) 850

Q2 A famous artist earned 16.5% profit by selling his painting on a certain art gallery. If the marked price and the cost price of his painting are in the ratio 8:5, then the discount percentage is:

(A) 21.5% (B) 24.5%
(C) 27.2% (D) 30.2%

Q3 Akshaya gains the selling price of 5 sq. ft of plot by selling 15 sq. ft of plot. What is the percent of gain?

(A) 50% (B) 45%
(C) 40% (D) 35%

Q4 A content creator sells two educational contents, one at a profit of 15% and the other at a loss of 15%. If the selling price of the two contents are the same, what is the overall profit or loss percentage? [Round off to two decimal places]

(A) 1% (B) 1.15%
(C) 2% (D) 2.25%

Q5 A farmer sold a cauliflower at a loss of 15%. If he sold it for Rs. 10 more, he could have gain 11.5% on it. How much is spent to plant a cauliflower? [Round off to nearest integer]

(A) 40 (B) 38
(C) 36 (D) 34

Q6 Dhanush sold a company share at a certain price. If he sold at 75% of this price, he would suffer loss of 5%. Then, find the percentage of profit when he sold his share at the original selling price.

(A) $12\frac{1}{2}\%$
(B) $16\frac{2}{3}\%$
(C) $22\frac{1}{2}\%$
(D) $26\frac{2}{3}\%$

Q7 When a famous author sold his books at a book fair, he made a 14.6% profit. He gave a discount of x% where the listed price and the cost price of his books are in the ratio 7:4. Find the value of x. [Round off to one decimal place]

(A) 27.2 (B) 34.5
(C) 36.6 (D) 29.5

Q8 A seller has 110 kg of sodium hydroxide, a part of which he sells at 5% profit and the rest at 25% profit. He gains 20% on the whole. How much sodium hydroxide (in Kg) is sold at 25% profit?

(A) 50 (B) 61.5
(C) 72 (D) 82.5

Q9 A watch manufacturing company marked the price of the watches 40% more than that of the production cost. They then sell $\frac{1}{5}$ of their stock in offline market at a discount of 15%, and half of the stock in online market at the marked price, and the rest at a discount of 20% in their website. Find their gain percentage.

(A) 25.5 (B) 27
(C) 27.4 (D) 28.6

Q10 A Merchant sells guitar at a discount of 10% on the marked price of $420. To increase its sales, they decided to allow an additional discount so that a guitar could be sold for $208. What was

the second discount allowed (in %)? [Approximate to the nearest integer]

(A) 44 (B) 45
(C) 46 (D) 50

Q11 At a boutique, a special offer allows customers to receive a skirt upon buying 3 cardigans. Each cardigan is sold for Rs. 450. Calculate the cost price (in Rs.) of the skirt, considering that the retailer makes a 20% profit when selling 3 cardigans. Additionally, it is known that the cost price of a cardigan is 40% lower than its selling price.

(A) 310 (B) 312
(C) 315 (D) 318

Q12 At a certain shopping mall, the cost of each jacket is 3 times the cost of each shirt. Kartik bought 18 jackets and a certain number of shirts. If he bought as many jackets as the number of shirts that he bought and vice versa, his total expenditure on the two items would have been $\frac{1}{17}$ times less. How many shirts did he buy? [Approximate to the nearest integer]

(A) 14 (B) 16
(C) 18 (D) 19

Q13 A person has two mobiles. CP of both the mobiles is same. On selling one mobile at Rs.17000 he faces a loss of 15%. At what price should he sell the other mobile phone to get a profit of total 8% on the entire transaction?

(A) Rs. 20200 (B) Rs. 43200
(C) Rs. 26200 (D) Rs. 16200

Q14 A shopkeeper labelled the price of his goods at 140% higher than the cost price. He then offered a discount of 25% on the marked price. A customer bargained and was given an additional discount of 20%. What is the gain of the shopkeeper?

(A) 30% (B) 70%
(C) 44% (D) 63%

Q15 Rishika sold a book at a profit of 24%. If she sold the same book for Rs. 60 more than the previous price, then she gained profit of 34%. What is the cost price of the book?

(A) Rs. 340 (B) Rs. 600
(C) Rs. 850 (D) Rs. 500

Q16 The profit earned after selling a gaming keyboard for Rs. 1560 is the same as the loss incurred after selling the keyboard for Rs. 1340. What is the cost price of the keyboard?

(A) Rs. 1600 (B) Rs. 1450
(C) Rs. 1380 (D) Rs. 1490

Q17 Successive discounts of 20%, 5% and 25% are provided on an article. What is the overall discount percentage provided?

(A) 39% (B) 41%
(C) 43% (D) 47%

Q18 A shopkeeper bought 2000 loose pens at the rate of Rs. 1.25 each. He spends 5% of purchase cost on packaging and marks the final cost up by 20%. If he gives 10% discount to the customers, find his overall profit or loss.

(A) 5.5% (B) 6.5%
(C) 8% (D) 10%

Q19 Sameer marked the price of an article at Rs. 15000. If he offers a discount of 18%, then his profit would be 23%. What is the cost price of the article?

(A) Rs. 8000 (B) Rs. 9000
(C) Rs. 10000 (D) Rs. 12000

Q20 The price of an article is marked up by 38% and then a discount of 20% is offered to the customer. If the selling price of the article is Rs. 4416, then what was the original cost price (in Rs.) of the article?

(A) 4000 (B) 4500
(C) 3600 (D) 4800

Q21 On selling a cycle at 7% loss and a bike at 17% gain, Mukesh gains Rs. 3000. If he sells the cycle

at 7% gain and bike at 8% gain, then he gains Rs. 12000. The cost price of the bike is:

(A) 40,000 (B) 50,000
(C) 60,000 (D) 70,000

Q22 A renowned company sold refurbished headphones at 15% profit at an ecommerce website. They noticed that if the cost price of each headphone is increased by Rs. 45 and at the same time if its selling price is also increases by Rs. 25, the percentage of profit decreases by 5 percentage points. Find the cost price (in Rs.).

Q23 A merchant owns 400 kgs of flour, from which he sells some quantity at 16% profit and the rest at 22% loss. As a result, he experiences a gross loss of 6%. Then, the quantity of floor he sold at 22% loss is: [Round off to the nearest integer]

Q24 A smartphone has a printed price of Rs. 8800. Ramcharan wanted to buy it online when it was on offer at 20% discount, but due to connectivity issues, he failed to place an order. Later he buys it at Rs. 4560 after getting two successive discounts. Then, the second discount (in %) was: [Round off to nearest integer]

Q25 One dozen pens marked at Rs. 130 are available at 15% discount. How many pens can be bought for Rs 221?

Q26 By selling an iPhone, Ritu has profit equal to 20% of its selling price. What is his profit percent?

Q27 A shopkeeper made a 25% profit when selling a quilt. If the quilt had been acquired for 10% less and sold for an additional Rs 24, the shopkeeper would have gained a 50% profit. The shopkeeper now purchases the quilt at its original cost, marks up the price by 40%, and provides a 10% discount to customers. What is the final selling price of the quilt?

(A) 298.8 (B) 300.2
(C) 301.6 (D) 302.4

Q28 Prabhas earned a profit by selling a book for \$1850, which is 30% more than the loss suffered by selling the book for \$1580. At what price should the book be sold to earn 30% profit?

(A) \$2210 (B) \$2207
(C) \$1087 (D) \$1090

Q29 A store owner decided to offer a series of successive discounts on a product to boost sales. He initially marked up the cost price by 50% to set the marked price (MP). Then, he offered a 20% discount followed by an additional 10% discount on the already discounted price. A customer bought the product and then sold it at a 30% profit on the final purchase price. If the customer made a profit of \$39, what was the cost price (CP) of the product (in nearest integer \$)?

(A) 100 (B) 110
(C) 120 (D) 130

Q30 The cost price of an article is Rs. 120. It is sold at a certain price. If it is sold at $\frac{1}{3}$rd of original selling price, there is a loss of $16\frac{2}{3}\%$. What is the original selling price of article?

(A) Rs. 300 (B) Rs. 360
(C) Rs. 270 (D) Rs. 320

Answer Key

Q1	(B)
Q2	(C)
Q3	(A)
Q4	(D)
Q5	(B)
Q6	(D)
Q7	(B)
Q8	(D)
Q9	(C)
Q10	(B)
Q11	(C)
Q12	(B)
Q13	(C)
Q14	(C)
Q15	(B)
Q16	(B)
Q17	(C)
Q18	(C)
Q19	(C)
Q20	(A)
Q21	(C)
Q22	490
Q23	232
Q24	35
Q25	24
Q26	25
Q27	(D)
Q28	(B)
Q29	(C)
Q30	(A)

Hints & Solutions

Q1 Text Solution:

Given that the selling price of the textbook is Rs. 876.

Let the marked price of the textbook is x and the cost price of the textbook is y.

Then, by the given condition,

$x \times \frac{100-27}{100} = 876$

$x = 1200$

Again, by the condition,

$y \times \left(\frac{160}{100}\right) = 1200$

$y = 750$

Hence, option (B) is the correct answer.

Q2 Text Solution:

Let's denote the marked price (MP) of the painting as M and the cost price (CP) as C. We are given that the ratio of the marked price to the cost price is 8:5, which can be written as:

$\frac{M}{C} = \frac{8}{5}$

Now, let's find the selling price (SP) of the painting. We are given that the artist earned a profit of 16.5% on the cost price. Therefore, we can express the selling price in terms of the cost price as:

SP = C + 16.5% of C

SP = C + 0.165 × C

SP = 1.165 × C

Since the painting was sold at a discount, the selling price is less than the marked price:

SP = M - Discount

Discount = M - SP

Now, we want to find the discount percentage. To do this, we'll first express the discount as a percentage of the marked price:

Discount Percentage = $\frac{\text{Discount}}{M} \times 100$

Substitute the values of M and SP in terms of C:

Discount Percentage = $\frac{(\frac{8}{5} \times C) - (1.165 \times C)}{(\frac{8}{5} \times C)} \times 100$

Let's simplify the expression:

Discount Percentage = $\frac{8-5.825}{8} \times 100$

Discount Percentage = $\frac{2.175}{8} \times 100$

Discount Percentage ≈ 0.271875 × 100

Discount Percentage ≈ 27.19% = 27.2% (approx.)

Therefore, the discount percentage is approximately 27.2%.

Q3 Text Solution:

From question,

S.P. of 15 sq. ft of plot = C.P of 15 sq. ft of plot + S.P of 5 sq. ft of plot

⇒ S.P of (15 – 5 = 10) sq. ft of plot = C.P of 15 sq. ft of plot

Let C.P of 1 sq. ft of plot = $ 1

∴ C.P of 10 sq. ft of plot = $ 10

S.P of 10 sq. ft of plot = $ 15

Gain = S.P of 10 sq. ft of plot - C.P of 10 sq. ft of plot = 15 - 10 = $ 5

$Gain\% = \frac{\text{Gain}}{CP\ of\ 10\ sq.\ ft\ of\ plot} \times 100$

$= \frac{5}{10} \times 100$

=50%

Hence, option (A) is the correct answer.

Q4 Text Solution:

Let the sale price of each content be Rs. 100.

Cost price of content sold at 15% profit = $\frac{100}{115}$ × 100 = Rs. $\frac{2000}{23}$

Cost price of content sold at 15% loss = $\frac{100}{85}$ × 100 = Rs. $\frac{2000}{17}$

Cost price of both contents = $\frac{2000}{23} + \frac{2000}{17}$ ≈ Rs. 204.60

Sale price of both the contents = 100+100=200

Loss = 204.60 – 200 = 4.6

Loss percentage = $\frac{4.6}{204.60}$ × 100 = 2.25%

Hence, option (D) is the correct answer.

Q5 Text Solution:

Let the planting cost be Rs. x

Then the SP at a loss of 15% = $\frac{x \times 85}{100}$ = Rs. $\frac{85x}{100}$

SP at a gain of $11.5\% = \frac{x \times 111.5}{100} = Rs.\ \frac{111.5x}{100}$

Now, by the given condition

$\frac{111.5x}{100} - \frac{85x}{100} = 10$

$\frac{26.5x}{100} = 10$

$x \approx Rs.\ 38$

Hence, option (B) is the correct answer.

Q6 Text Solution:

Let the original price of the share be 100x.

SP of the share = $100x \times \frac{75}{100} = 75x$

CP of the share = $75x \times \left(\frac{100}{95}\right) = \frac{1500x}{19}$

If the share sold at original price, then the profit

= 100x - $\frac{1500x}{19}$

= $\frac{1900x - 1500x}{19}$

= $\frac{400x}{19}$

Thus, the profit percentage = $\left[\frac{\frac{400x}{19}}{\frac{1500x}{19}}\right] \times 100$

= $26\frac{2}{3}\%$

Hence, option (D) is the correct answer.

Q7 Text Solution:

Note that, 14.6% = $\frac{73}{500}$

Ratio of marked price and the cost price of the book = 7: 4 or 700:400

Therefore, the selling price of the book = 400 × $\frac{573}{500}$ = Rs. 458.40

So, the discount =Marked price – Selling price

= 700 – 458.40

= 241.60

Thus, the discount percentage = $\frac{241.60}{700} \times 100$

≈ 34.5% = x%.

Hence, the value of x = 34.5.

Thus, option (B) is correct.

Q8 Text Solution:

Let x kg be the quantity of sodium hydroxide sold at 25% profit, and the price of sodium hydroxide be Rs. 1/kg

∴ 1.25x + (110 – x)1.05 = 132

=> 0.2x + 115.5 = 132

⇒ 0.2x = 16.5

⇒ x = 82.5

Hence, 82.5 kg of sodium hydroxide (in Kg) is sold at 25% profit.

Q9 Text Solution:

If CP = Rs. 100, MP = Rs. 140.

Average SP = $\frac{140}{2}$ + 140 × $\frac{1}{5}$ × $\frac{85}{100}$ + {140 × (100-50-20)% × $\frac{80}{100}$}

= 127.4

Hence, profit percentage

= $\frac{(127.4 - 100)}{100}$ × 100

= 27.4

Q10 Text Solution:

The guitar is sold for Rs. 420 – 420 × $\frac{10}{100}$ = $378 after giving a 10% discount.

After an additional discount, it was sold for $208.

So, second discount percentage = $\frac{(378-208)}{378}$ × 100 ≈ 45

Q11 Text Solution:

Let's say the cost price of each skirt = Rs x.

Selling price of 3 cardigans = 3 × 450 = Rs 1350

One skirt is free with 3 cardigans.

So, the selling price of 3 cardigans and 1 skirt = Rs. (1350 + 0) = Rs 1350

He got a profit of 20% in this deal.

So, the cost price of 3 cardigans and 1 skirt

= $\frac{(1350 \times 100)}{100+20}$

= Rs. 1125

According to the question,

The cost price of 1 cardigan is

= 450 × (1 – $\frac{40}{100}$)

= Rs. 270

So, cost price of 3 cardigans is 3 × 270 = Rs 810 ----(2)

Subtracting Equation (2) from Equation (1) gives us

The required cost price of the skirt is Rs. (1125 – 810) = Rs. 315

Q12 Text Solution:

Let the cost of each shirt = C

Then, the cost of each jacket = 3C

Kartik bought 18 jackets and S shirts (say).

Total Cost = 18 × 3C + SC = 54C + SC = C (S + 54)

Kartik bought S jacket and 18 shirts.

Total Cost = 18 × C + S (3C) = 3C (S + 6)

Thus, according to the question,

C (S + 54) (1 – $\frac{1}{17}$) = 3C (S + 6)

=> S = $\frac{558}{35}$

S ≈ 16

Q13 **Text Solution:**

Cost price of one mobile = Rs. Y

$17000 = Y \times (1 - \frac{15}{100})$

$17000 = Y \times (\frac{85}{100})$

$Y = 17000 \times \frac{100}{85}$

Y = Rs. 20,000

Cost price of one mobile 20,000

Cost of two mobiles = 20000 × 2 = Rs.40000

Selling price of both mobiles combine = 40000 $\times (1 + \frac{8}{100})$

= Rs. 43200

To get profit of 8 % on total transaction the second mobile must be sold at

= (43200 - 17000)

= Rs. 26200

Q14 **Text Solution:**

Let CP = 100

Then, MP = 240

Now there are two successive discounts of 25% and 20%

Hence SP = $240 \times 0.75 \times 0.8 = 144$

Profit % = 44%

Q15 **Text Solution:**

Let cost price of the book is Rs. X

SP = $\frac{124}{100} \times X = 1.24X$

If SP = 1.24X + 60, then profit % = 34%

$\frac{(1.24X+60-X)}{X} = \frac{34}{100}$

=> (0.24X × 100)+ 6000 = 34X

=> 10X = 6000

=> X = 600

Q16 **Text Solution:**

$SP_1 = 1560$

$SP_2 = 1340$

The profit after selling at Rs 1560 = Loss after selling at Rs 1340

$SP_1 - CP = CP - SP_2$

$1560 - CP = CP - 1340$

CP = Rs. 1450

Q17 **Text Solution:**

Let the M.P of the article be Rs 100

S.P =$100 \times (1 - \frac{20}{100}) \times (1 - \frac{5}{100}) \times (1 - \frac{25}{100})$

= Rs. 57

Overall percentage discount = 100 - 57 = 43%

Q18 **Text Solution:**

CP of 2000 loose pens = 2000 × 1.25 = 2500

Packaging Cost = 0.05 × 2500 = 125

Total CP = 2500 + 125 = 2625

Marked Price = 2625 × 1.20 = 3150

Selling Price = 3150 × 0.9 = 2835

Profit% = $\frac{(2835 - 2625)}{2625} \times 100 = 8\%$

Q19 **Text Solution:**

Let 100c be the cost price of the article.

So, the selling price of the article to gain a profit of 23%

= 100c $(1 + \frac{23}{100})$ = 123c ...(1)

Selling price of the article when sold at a discount of 18%

= Rs. 15000 $(1 - \frac{18}{100})$ = Rs.12300 ...(2)

Therefore, 123c = Rs. 12300

i.e., 100c = Rs. 10000

Q20 **Text Solution:**

Let C.P. be Rs. W.

M.P. = (100 + 38)% of W = 1.38W

Now, after discount, S.P. = (100-20)% of M.P. = 80% of 1.38W = 1.104W

So, 1.104W = 4416

W = $\frac{4416}{1.104}$ = 4000

Hence, C.P. = 4000

Q21 **Text Solution:**

Suppose cost prices of cycle and bike are C and B respectively.

Then,

B × 17% - C ×7% = 3000 ...(i)

B × 8% + C × 7% = 12000 ..(ii)

(i) + (ii), implies

B × 25% = 15000

B = 60,000

Q22 **Text Solution:**

Let the cost price be Rs. 100x

15% profit means selling price is Rs. 115x.

New cost price = Rs. (100x+45)

New selling price = Rs. (115x+25)

New profit =(115x+25) – (100x+45) = Rs. 15x–20

15% less 5 % = 10 %

$\frac{15x-20}{100x+45} = 10\% = \frac{1}{10}$

On cross multiplying, we have

150x−200=100x+45

⇒50x=245

⇒x=4.9

Therefore, the cost price is Rs. 4.9 × 100 = Rs. 490.

Q23 **Text Solution:**

Let's assume that the merchant sells x kgs of flour at a 16% profit and the rest (400 - x) kgs at a 22% loss. As a result, he experiences a gross loss of 6%.

We can write the equation for the total loss percentage as follows:

$\frac{16\% \times x - 22\% \times (400-x)}{400}$ = -6%

Now, we need to solve for x:

$\frac{0.16x - 0.22 \times (400-x)}{400}$ = -0.06

0.16x - 0.22(400 - x) = -0.06 ×400

0.16x - 88 + 0.22x = -24

0.38x = 64

x = $\frac{64}{0.38}$

x ≈ 168.42

Since x represents the quantity of flour sold at a 16% profit, we need to find the quantity sold at a 22% loss. So,

Quantity sold at 22% loss = 400 - x ≈ 400 - 168.42 ≈ 232 kgs

The merchant sold approximately 232 kgs of flour at 22% loss.

Q24 **Text Solution:**

Given the printed price of the smartphone = Rs. 8800

The selling price of the smartphone = Rs. 4560

First discount = 20%

Therefore, Discount = Marked price – Selling price

=8800 – 4560

= Rs. 4240

Now, Discount = Marked price × Discount%

$4240 = 8800 \times x\%$

$x\% = \frac{53}{110}$

- $x = \frac{530}{11}\%$

Successive discount = $\frac{530}{11}\%$

Let y be the second discount. Then,

$\frac{530}{11} = 20 + y - \frac{20y}{100}$

$\frac{80y}{100} = \frac{310}{11}$

$y = \frac{775}{22} \approx 35\%$

Q25 **Text Solution:**

Marked price of 12 pens = Rs. 130

Selling price of 12 pens = 130 × $\frac{85}{100}$ = Rs. 110.5

Selling price of a pen = $\frac{110.5}{12}$ = Rs. $\frac{221}{24}$

Number of pens bought for Rs. 221 = 221 × $\frac{24}{221}$ = 24

Q26 **Text Solution:**

Let the SP be Rs. x

By the given condition,

Profit = 20% of x = $\frac{20x}{100}$ = $\frac{x}{5}$

We know that,

Profit = SP – CP

$\frac{x}{5}$ = x- CP

CP = x - $\frac{x}{5}$ = $\frac{4x}{5}$

Now, profit percent = $\frac{\frac{x}{5}}{\frac{4x}{5}} \times 100 = 25\%$

Q27 **Text Solution:**

Let's denote the original cost price of the quilt as CP and the original selling price as SP_1.

We know the shopkeeper made a 25% profit, so we have:

SP_1 = CP × (1 + $\frac{25}{100}$) = 1.25 × CP

The quilt could have been acquired for 10% less, which means the reduced cost price is:

Reduced CP = CP × (1 - $\frac{10}{100}$) = 0.9 × CP

If the shopkeeper had sold the quilt for Rs 24 more, the new selling price would be:

New SP = SP_1 + 24 = 1.25 × CP + 24

With this new selling price, the profit would have been 50%:

New SP = Reduced CP × (1 + $\frac{50}{100}$) = 0.9 × CP × 1.5

Equate the two expressions for New SP:

1.25 × CP + 24 = 0.9 × CP × 1.5

Solve for CP:

1.25 × CP + 24 = 1.35× CP

0.1 × CP = 24

CP = 240

Now, the shopkeeper marks up the price by 40% and offers a 10% discount:

The marked-up price (MP) can be calculated as:

MP = CP × (1 + $\frac{40}{100}$) = 240 × (1 + 0.4) = 240 × 1.4 = 336

The final selling price (SP_2) after the 10% discount can be calculated as:

SP_2 = MP × (1 - $\frac{10}{100}$) = 336 × (1 - 0.1) = 336 × 0.9 = Rs. 302.4

Q28 **Text Solution:**

Let C.P. of the book be Rs. x.

When S.P. is $1850, then Profit = 1850 − x

When S.P. is $1580, then Loss = x − 1580

According to the given condition, we have

Profit = 130% of Loss.

Therefore, we have

$1850 - x = \frac{130}{100}(x - 1580)$

18500 - 10x = 13x - 20540

⇒ 23x = 39040

⇒ x = $\frac{39040}{23}$

Thus, the required SP = $\frac{130}{100} \times \frac{39040}{23} \approx \$\ 2207$

Hence, option (B) is the correct answer.

Q29 **Text Solution:**

To solve this problem, we'll go step by step:

1. The store owner marked up the cost price (CP) by 50% to set the marked price (MP).

So, MP = CP + 0.5 × CP = 1.5 × CP.

2. The owner then offered a 20% discount, which means the customer pays 80% of the MP. So, after the first discount, the selling price becomes 0.8 × MP.

3. After the first discount, an additional 10% discount is applied. So, the customer pays 90% of the already discounted price. After the second discount, the selling price becomes 0.9 × (0.8 × MP).

4. The customer bought the product and then sold it at a 30% profit on the final purchase price. Let's denote the final purchase price as FPP. The selling price (SP) would be FPP + 0.3 × FPP = 1.3 × FPP.

5. It's given that the customer made a profit of $39. So, SP - FPP = $39.

Now, let's put everything together and solve for CP.

Since MP = 1.5 × CP and FPP = 0.9 × (0.8 × MP), we can write

FPP = 0.9 × (0.8 × 1.5 × CP) = 1.08 × CP.

Now, using the profit equation (SP - FPP = $39), we can write

1.3 × FPP - FPP = $39.

Simplifying the equation, we get 0.3 × FPP = $39.

Now, divide both sides of the equation by 0.3:

FPP = $\frac{\$39}{0.3}$

=> FPP = $130

Now we know the final purchase price (FPP) is $130. Let's go back to the equation we derived for FPP:

FPP = 1.08 × CP

Substitute the value of FPP in this equation:

$130 = 1.08 × CP

Now, to find the cost price (CP), divide both sides by 1.08:

CP = $\frac{\$130}{1.08}$

=> CP ≈ $120.37

So, the cost price (CP) of the product is approximately $120.

Q30 **Text Solution:**

Let's first find the loss amount when the article is sold at 1/3rd of the original selling price with a loss of $16\frac{2}{3}\%$.

The loss percentage can be expressed as a fraction: $16\frac{2}{3}\%$ = $\frac{50}{3}$ %

Now, we know that the cost price (CP) of the article is Rs. 120.

Let's calculate the amount of loss:

Loss = $\frac{\text{CP} \times Loss\%}{100}$

Loss = $\frac{120 \times \frac{50}{3}}{100}$

Loss = $\frac{120 \times 50}{300}$

Loss = 120 × $\frac{1}{6}$

Loss = Rs. 20

Now, we can find the selling price (SP) when the article is sold at a loss:

SP (at loss) = CP - Loss

SP (at loss) = 120 - 20

SP (at loss) = Rs. 100

We know that this selling price (at loss) is $\frac{1}{3}$rd of the original selling price. Let's denote the original selling price as "x". We can set up the equation:

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

Now, let's solve for x, the original selling price:

x = 100 $\times$ 3

x = 300

So, the original selling price of the article is Rs. 300.