

# Profit and Loss

**Profit and Loss** is a very important chapter of quantitative aptitude. To solve the questions based on profit and loss in very less time, you must know the tricks. This way, you can easily save at least 30-40 seconds while doing questions of this topic.

**Cost Price (CP):**The price paid to buy a particular product is called its cost price. Some overhead expenses such as transportation, taxes etc. are also included in the cost price.

**Selling Price (SP):**The amount of money received for the product when it is sold.

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

**Profit/ Gain:**There is a gain/profit in a transaction if the selling price is more than the cost price. The excess of the selling price to the cost price is called profit/gain.

- Profit = Selling Price - Cost Price

**Loss:**When the selling price is less than the cost price there is loss in the transaction. The excess of cost price over the selling price is called loss.

- $\text{Loss} = \text{Cost Price} - \text{Selling Price}$
- $\text{Profit}\% = 100 * \text{Profit}/\text{Cost Price}$
- $\text{Loss}\% = 100 * \text{Loss}/\text{Cost price}$

When profit% and loss% is same:

If two items are sold each at Rs X, one at a gain of p % and the other at a loss of p %, then the two

transactions have resulted in an overall loss of  $\frac{p^2}{100}$  %, and the absolute

value of the loss Rs.  $\frac{2 \cdot p^2 \cdot x}{100^2 - p^2}$

Equal % profit & loss on the same cost price of two articles:

If the cost price of two items is X, and one is sold at a profit of p % and the other at a loss of p %, then the two transactions have resulted in no gain or no loss.

**Trade Discount:**Discount on the Marked Price to attract customers is known as Trade Discount.

**Note:**The discount is always taken as a % of the Marked Price, unless otherwise specified.

**Example:** Let the list price of an article be Rs. 450. A discount of 5% on its list price is announced. Then, the new selling price =  $450 \times \frac{95}{100} = \text{Rs } 427.5$ .

**Cash Discount:** In addition to trade discount, the manufacturer may offer an additional discount called the Cash Discount if the buyer makes full payment within a certain specified time. Cash Discount is usually offered on the net price (the price after subtracting discount from the marked price).

Therefore,

Cash Price = Net Price - Cash Discount

**Note:** Cash discount is always calculated on net price, unless otherwise specified.

**False Weight:** If a trader professes to sell his goods at cost price, but uses false weights, then

$$\text{Gain\%} = \left[ \frac{\text{Error}}{(\text{True Value}) - \text{Error}} \times 100 \right]$$

**Successive Discounts:** When a tradesman offers more than one discount to the customer, then the total discount offered is calculated by applying the method of decimals, learned in the topic of percentages.

**Note:** When the SP of x articles is equal to CP of y articles, what is the profit percent earned?

$$\text{Profit percent} = \frac{100 \times \text{difference in } x \text{ and } y}{x}$$

### Important Formulas

- $\text{Gain}\% = \frac{\text{Gain} \times 100}{C P}$
- $\text{Loss}\% = \frac{\text{Loss} \times 100}{C P}$
- $C.P. = \left( \frac{100}{100 + \text{Gain}} \right) * S P$
- $S.P. = \left( \frac{100 + \text{Gain}\%}{100} \right) * C P$
- $S.P. = \left( \frac{100 - \text{Loss}\%}{100} \right) * C P$
- $C.P. = \left( \frac{100\%}{100 - \text{Loss}\%} \right) * S P$

## Profit and Loss Question and Answer:

**Q.1. A real estate agent sells two sites for Rs. 18000 each. On one he gains 25% and on the other he loses 25 %. What is his loss or gain percent?**

- A. 6.25 % gain
- B. 6.25% loss
- C. No profit no loss
- D. 4% loss
- E. 4% profit

**Sol : Option B**

profit and loss formula

$$\text{Loss \%} = \frac{x^2}{100} = \frac{625}{100} = 6.25\%$$

**Q.2. If a retailer marks up his price by 30 % and then allows a 30 % discount, what is his percentage profit or loss?**

- A. 9 % gain
- B. 8 % gain
- C. 8% loss
- D. 9 % loss
- E. 5% loss

**Sol : Option D**

$$\text{Net loss} = \frac{x^2}{100\%} = \frac{900}{100} = 9\%$$

**Q.3. By selling an article for Rs 600 more, Karthik would have made 5% profit on his sale instead of a 11% loss. What was his cost price?**

A. Rs. 3750

B. Rs. 4000

C. Rs. 2250

D. Rs. 6,000

E. Rs. 4750

**Sol : Option A**

$$\text{CP} = (\text{Difference in SP}) \div (\% \text{ Difference in profit}) = 600 / (5 - (-11)) \times 100 = (600/16) \times 100 = \text{Rs}3750$$

**Q.4. I make a profit of 20% by selling an article. What would be the profit percent if it were calculated on the selling price instead of the cost price?**

- A. 10 %
- B. 20%
- C. 30%
- D. 16.67%
- E. 12.5%

**Sol : Option D**

Let CP = 100 then SP = 120. Profit % if it was calculated on SP will be

$$\Rightarrow \frac{20}{120} \times 100 = 16.67\%$$



**Q.5. A tradesman marks his goods 25% above the cost price and allows his customers 12 % reduction on their bills. What percent profit does he make?**

- A. 14 %
- B. 10%
- C. 18%
- D. 12.5%
- E. 12%

**Sol : Option B**

Let CP= Rs. 100, therefore, MP= Rs. 125, Discount% = 12%

SP = 88% of MP = 88% of 125 = Rs. 110. Profit = 110 – 100 = Rs. 10

Profit = 10%.

**Q.6. In order to maintain the price line, a trader allows a discount of 12 % on the marked price of goods in his shop. However, he still makes a gross profit of 32 % on the cost price. Find the profit percent he would have made on the selling price had he sold at the marked price.**

A. 28.07 %

B. 50 %

C. 31.21 %

D. 23 %

E. 40%

**Sol : Option B**

Let CP = 100. SP = 132. This is after a discount of 12%, thus the marked price must be  $132/0.88 = 150$ . Thus he is marking the product 50% above the cost price. Hence the profit will be 50%.

**Q.7. An orange vendor makes a profit of 10% by selling oranges at a certain price. If he charges Rs. 1.4 higher per orange he would gain 30%. Find the original price at which he sold an orange.**

- A. Rs. 6
- B. Rs. 5.80
- C. Rs. 6.25
- D. Rs. 6.70
- E. Rs 7.70

**Sol : Option E**

Rs. 1.4 is the increase in absolute, 20% is the increase in percentage. Thus those two can be equated. Hence it can be concluded that 1.4 is 20% of the price i.e. the CP of one orange is  $1.4/0.20 = \text{Rs. } 7$ . The SP per orange in the first case is  $7 \times 1.1 = \text{Rs. } 7.70$ . Hence option is E.

**Q8. A man bought a horse for a certain sum and sold it, at a loss of 8 % on his outlay. If he had received Rs. 1800 more, he would have gained  $14\frac{1}{2}$  % on his outlay. What did the horse cost?**

- A. Rs. 3,500
- B. Rs. 5,000
- C. Rs. 6,000
- D. Rs. 8,000
- E. Rs. 6500

**Sol : Option D**

$CP = (\text{Difference in SP}) \div (\% \text{ Difference in profit})$  CP of the horse =  
 $1800 \times 100 / 14.5 - (-8) = 1800 \times 100 / 22.5 \Rightarrow CP = 8000.$

**Q9. Divya made a profit of 25% when selling a Salwar Kameez at Rs. 4,000. Find the cost price of the same dress.**

A. Rs. 4,800

B. Rs. 3,650

C. Rs. 3,200

D. Rs. 3,000

E. Rs. 2,700

**Sol : Option C**

$$\text{Old CP} = 4000 \times (100/125) = 3200$$

**Q10. What profit percent is made by selling an article at a certain price if by selling at four-fifth of that price there may be a loss of 12 %?**

- A. 10 %
- B. 25 %
- C. 42 %
- D. 20 %
- E. 35%

**Sol : Option A**

Such question can be better answered by thinking in the reverse order. Let the CP = 100, there is a loss of 12% in the final case i.e.  $SP = 100 - 12 =$  Rs 88. Now this Rs. 88 is the four-fifth of the selling price as per the question. The original selling price will be  $88 \times \frac{5}{4} =$  Rs. 110. CP =100. There is a profit of Rs. 10, which is nothing but 10%, as the CP is taken to be Rs. 100

**Q11: The price of 6 pencils is Rs. 30 and that of 12 pens is Rs. 120. What is the average price of 50 pencils and 50 pens?**

(A) 6.75

(B) 7.5

(C) 5

(D) 5.75

**Answer**

Correct Answer : B

**Q12 : A watch sold for Rs.1440 at 10 % loss, at what price it should be sold so as to earn 15% profit.**

(A) 1820

(B) 1830

(C) 1840

(D) 1850

**Answer**

Correct Answer : C

**Q 13: An article when sold at a gain of 5% yields Rs. 15 more than when sold at a loss of 5%. What is the C.P.?**

- (A) Rs. 64
- (B) Rs. 80
- (C) Rs. 150
- (D) None of these

**Answer**

Correct Answer : C

**Q 14: The C.P. of an article is 40% of the S.P. The percent that the S.P. is of C.P. is....**

- (A) 250%
- (B) 240%
- (C) 60%
- (D) 40%

**Answer**

Correct Answer : A



**Q 15: A reduction of 25% in the price of eggs will enable one to buy 4 dozen more eggs for Rs. 96. What is the price per dozen?**

- (A) Rs. 6
- (B) Rs. 8
- (C) Rs. 9
- (D) None of these

**Answer**

Correct Answer : B

**Q 16: There would be 10% loss if a toy is sold at Rs. 10.80 per piece. At what price should it be sold to earn a profit of 20%?**

- (A) Rs. 12
- (B) Rs. 12.96
- (C) Rs. 14.40
- (D) None of these

**Answer**

Correct Answer : C

**Q 17: A cycle is sold for Rs.2070 at profit of 15%, at what profit of 15%, at what price it should be sold so as to earn 25% Profit.**

(A) 2150

(B) 2250

(C) 2350

(D) 2450

**Answer**

Correct Answer : B

**Q 18: If one object is sold for 5% instead of 5 % loss the seller gets Rs. 33.6 more. What is the cost Price?**

(A) 336

(B) 454

(C) 672

(D) 785

**Answer**

Correct Answer : A

**Q 19: A machine was sold at 10% Profit had it been sold for Rs 80 less the seller would have incurred 10% loss. What is cost price of Machine?**

(A) 350

(B) 400

(C) 450

(D) 520

**Answer**

Correct Answer : B

**Q 20: Pratap bought a radio at a discount of 25% on the real price. He got 40 Rs more, when he sold it at 140 percent of the cost price. Find the the price at which Pratap bought the radio?**

(A) 800

(B) 700

(C) 900

(D) 600

**Answer**

Correct Answer : A

**Q 21: A dishonest dealer professes to sell his good at cost price, but he uses a weight of 800 gm. For one kg. Find his gain percent?**

(A) 20

(B) 25

(C) 40

(D) 10

**Answer**

Correct Answer : B

**Q 22: Cost price of 21 objects is equal to selling price of 15 objects.**

**What is the profit?**

(A) 25%

(B) 30%

(C) 33%

(D) 40%

**Answer**

Correct Answer : D

**Q 23: A shopkeeper earns a profit equal to the cost price of 15 meter by selling 45 meter cloth. Find the profit percent?**

(A) 33%

(B) 30%

(C)

(D) 55%

**Answer**

Correct Answer : C

**Q 24: A person buys oranges 8 for Rs 5 and sells them at 5 Rs 8. Find the profit or loss percentage in the whole transaction.**

(A) 100% Profit

(B) 150% Loss

(C) 146% Profit

(D) 156% Profit

**Answer**

Correct Answer : D

**Q 25: A fruit seller buys lemons two for Rs 1 and sells at 5 for Rs 3 rate. Find his profit percent.**

(A) 10

(B) 15

(C) 20

(D) 25

**Answer**

Correct Answer : C

**Q 26: A shopkeeper sells a TV set on discount of 8% of printed price and gains 25%. If print price was Rs 20000 then, what was the cost price?**

(A) Rs 13800

(B) Rs 14720

(C) Rs 14800

(D) Rs 13720

**Answer**

Correct Answer : B

**Q 27: The marked price of a certain object is Rs 10,000. Shopkeeper gives three consecutive discounts of 10%, 20%, 30%. Find the selling price of the object.**

- (A) Rs 6000
- (B) Rs 6340
- (C) Rs 5040
- (D) Rs 7000

**Answer**

Correct Answer : C

**Q 28: If a dealer wants to earn 40% profit on an article after offering 30% discount, by what percent should he increase his marked price to arrive at the label price?**

- (A) 50%
- (B) 100%
- (C) 200%
- (D) 60%

**Answer**

Correct Answer : B

**Q 29: A shopkeeper earns a profit of shopkeeper earns a profit of 25% after giving a discount of 20%. Find the ratio between the cost price and the marked price.**

(A) 25:16

(B) 16:25

(C) 16:27

(D) 27:10

**Answer**

Correct Answer : B

**Q 30: If 3 toys are sold at the cost price of 4 toys of the same kind, the profit will be:**

(A) 25%

(B)

(C)

(D) 50%

**Answer**

Correct Answer : B



**Q 31: A house and a shop were sold for Rs. 1 lakh each, In this transaction, the house sale resulted into 20 % loss whereas the shop sale into 20 % profit. The entire transaction resulted in:**

(A) no loss no gain

(B) gain of Rs.

(C) loss of Rs.

lakh

(D) loss of

lakh

**Answer**

Correct Answer : C

**Q 32: Cost of 24 bats and 32 sticks is Rs 5600. What is the price of 3 bats and 4 sticks?**

(A) Rs 1400

(B) Rs 2800

(C) Rs 700

(D) Data Inadequate

(E) None of these

**Answer**

Correct Answer : C

**Q 33: If a chair sold for Rs. 600 at the profit of 20%, then the original price of the chair is:**

(A) Rs. 540

(B) Rs. 500

(C) Rs. 480

(D) Rs. 580

**Answer**

Correct Answer : B

**Q34 : If a man estimates his loss as 20% of the selling price, then his loss percent is:**

(A) 20%

(B) 25%

(C)  $40\frac{1}{3}\%$

(D)  $50\frac{1}{3}\%$

**Answer**

Correct Answer : D

**Q 35: A trader bought 10 kg of apples for Rs. 405 out of which 1 kg of apples were found to be rotten. If he wishes to make a profit of 10 % at what rate should he sell the remaining apples per kg?**

(A) 49.5

(B) 48

(C) 46

(D) 47

**Answer**

Correct Answer : A

**Q 36: A trader had 2000 kgs of rice. He sold a part of it at 10 % profit and the rest at 16 % profit so that he made a total profit of 14.2%. How much rice (in kg) did he sell at 10 % profit?**

(A) 1400

(B) 600

(C) 800

(D) 1000

**Answer**

Correct Answer : B

**Q 37: An oil refinery buys oil at Rs 3600 per barrel. There is 10 % wastage. If the refinery wants to earn 5% profit then at what price should it sell including 8 % tax on selling price? (in Rs per barrel)**

(A) 3674

(B) 3711

(C) 4219

(D) 4536

**Answer**

Correct Answer : D

**Q 38: By selling a pen for Rs 105 there is a loss of 30%. At what price (in Rs) the pen must be sold in order to gain 30%?**

(A) 215

(B) 165

(C) 195

(D) 200

**Answer**

Correct Answer : C

**Q 39: By selling an article for Rs. 700 a man lost 30 %. At what price should he have sold it to gain 30%?**

- (A) Rs . 910
- (B) Rs . 1200
- (C) Rs . 1232
- (D) Rs . 1300

**Answer**

Correct Answer : D

**Q 40: If an article is sold at 200 % profit then the ratio of its cost price to its selling price will be**

- (A) 1 : 2
- (B) 2 : 1
- (C) 1 : 3
- (D) 3 : 1

**Answer**

Correct Answer : C

**Q 41: A man buys a table and a chair for 500. He sells the table at a loss of 10 % and the chair at a gain of 10 %. He still gain ₹10 on the whole. The cost price of chair in rupees is**

(A) ₹ 200

(B) ₹ 250

(C) ₹ 300

(D) ₹ 350

**Answer**

Correct Answer : C

**Q 42: Profit after selling a commodity for 524 is the same as loss after selling it for Rs. 452. The cost price of the commodity is**

(A) 480

(B) 500

(C) 488

(D) 485

**Answer**

Correct Answer : C

**Q 43: A dishonest dealer marks up the price of an article by 15% and gave a discount of 20%. He also uses 900gm instead of 1000gm. Find his profit percent.**

(A)

(B)

(C) 10

(D)

(E) 20

**Answer**

Correct Answer : B

## References Links

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<https://www.hitbullseye.com/Quant/Profit-and-Loss.php>

<https://www.examsbook.com/profit-and-loss-questions>