

RD SHARMA

Solutions

Class 8 Maths

Chapter 13

Ex 13.2

Question 1: Find the S.P.**Solution:**

(i) P= Rs.13000 and Discount= 10%

We know that S.P = M.P – discount

$$\text{Discount}\% = \frac{\text{discount}}{\text{M.P}} \times 100$$

$$= \frac{10}{1300} \times 100$$

$$= \text{Rs.}130$$

$$\text{S.P} = \text{Rs} (1300-130) = \text{Rs.} 1170$$

(ii) M.P= Rs.500 and Discount= 15%

We know that S.P = M.P – discount

$$\text{Discount}\% = \frac{\text{discount}}{\text{M.P}} \times 100$$

$$= \frac{15}{100} \times 500$$

$$= \text{Rs.}75$$

$$\text{S.P} = \text{Rs.}(500-75) = \text{Rs.} 425$$

Question 2: Find the M.P.**Solution**

(i) P= Rs.1222 and Discount= 6%

Given, S.P = Rs. 1222

Discount = 6%

$$\text{M.P} = 100 \times \frac{\text{S.P}}{100} - \text{discount}\%$$

$$= 100 \times \frac{1222}{100} - 6$$

$$= \text{Rs.}1300$$

(ii) P= Rs.495 and Discount= 1%

Given, S.P = Rs. 495

Discount = 1%

$$\text{M.P} = 100 \times \frac{\text{S.P}}{100} - \text{discount}\%$$

$$= 100 \times \frac{495}{100} - 1$$

$$= \text{Rs.}500$$

Question 3: Find the discount in percent.**Solution**

(i) P= Rs.900 and S.P =Rs.873

We know that,

$$\text{S.P} = \text{M.P}- \text{discount}$$

$$= 873 = 900- \text{discount}$$

$$= \text{discount} = (900-873) = \text{Rs.} 27$$

$$\text{Discount}\% = 100 \times \frac{\text{discount}}{\text{M.P}}$$

$$= 100 \times \frac{27}{900}$$

$$= 3\%$$

(ii) $P = \text{Rs. } 500$ and $S.P = \text{Rs. } 425$

We know that,

$$S.P = M.P - \text{discount}$$

$$= 425 = 500 - \text{discount}$$

$$= \text{discount} = (500 - 425) = \text{Rs. } 75$$

$$\text{Discount}\% = 100 \times \frac{\text{discount}}{M.P}$$

$$= 100 \times \frac{75}{500} = 15\%$$

Question 4 A shop selling sewing machines offers 3% discount on all cash purchases. What cash amount does a customer pay for a sewing machine the price of which is marked as Rs.650?

Solution

$$\text{Discount} = 3\%$$

$$\text{Marked price} = \text{Rs. } 650$$

$$\text{Now, } 3\% \text{ of the M.P} = \frac{3}{100} \times 650$$

$$= \text{Rs. } 19.50$$

$$\text{So, M.P} = \text{M.P} - \text{discount}$$

$$= 650 - 19.50$$

$$= \text{Rs. } 630.50$$

Question 5: The marked price of a ceiling fan is Rs. 720. During off-season, it is sold for Rs.684, determine the discount percentage.

Solution

$$\text{Given, M.P of the ceiling fan} = \text{Rs. } 720$$

$$S.P \text{ of the ceiling fan} = \text{Rs. } 684$$

$$\text{Since } S.P = M.P - \text{discount}$$

$$\text{Discount} = M.P - S.P$$

$$= \text{Rs. } (720 - 684)$$

$$= \text{Rs. } 36$$

$$\text{Discount}\% = \frac{\text{discount}}{M.P} \times 100$$

$$= \frac{36}{720} \times 100$$

$$= 5\%$$

Question 6

On the eve of Gandhi Jayanti, a saree is sold for Rs.720 after allowing 20% discount. What is the market price?

Solution

$$\text{Given, S.P of the saree} = \text{Rs. } 720$$

$$\text{Discount on the saree} = 20\%$$

$$\text{We know, Discount}\% = \frac{\text{discount}}{M.P} \times 100$$

$$\text{Let the M.P of the saree be Rs. } x.$$

$$\text{Therefore, discount} = \frac{20x}{100} \times 720$$

$$\text{Since, } S.P = M.P - \text{discount}$$

$$= 720 = x - 0.20(720)$$

$$= x = \text{Rs. } 900$$

Thus, the M.P of the saree is Rs.900

Question 7

After allowing a discount of $7\frac{1}{2}\%$ on the market price, an article is sold for Rs.555. find the marked price.

Solution

Given, S.P of the article = Rs. 555

Discount = 7.5%

Let the M.P of the article be Rs. x

$$\text{Therefore, Discount\%} = \frac{\text{MP}}{100} \times \text{discount}$$

$$= \text{Rs. } 0.075x$$

Since, S.P = M.P – discount

$$= 555 = x - 0.075x$$

$$= x = \text{Rs. } 600$$

Thus, the M.P of the article is Rs.600

Question 8

A shopkeeper allows his customers 10% off on the marked price of goods and still gets a profit of 25%. What is the actual cost to him of an article marked Rs.250?

Solution

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

M.P of the article = Rs.250

Discount = 10%

Discount = 10% of 250

$$= \frac{10}{100} \times 250$$

$$= \text{Rs. } 25$$

S.P = M.P – discount

$$= \text{Rs. } (250 - 25)$$

$$= \text{Rs. } 225$$

Profit = 25%

$$\text{C.P} = \frac{100}{100+25} \times 225$$

$$= \text{Rs. } 180$$

The C.P of the article is Rs. 180

Question 9

A shopkeeper allows 20% off on the marked price of goods and still gets a profit of 25%. What is the actual cost to him of an article marked as Rs.500?

Solution

Given,

M.P of the an article = Rs.500

Discount = 20%

Therefore, discount = 20% of 500

$$= \frac{20}{100} \times 500$$

$$= \text{Rs. } 100$$

S.P = M.P – discount

Discount = (M.P – S.P)

$$= \text{Rs. } (500-100)$$

$$= \text{Rs. } 400$$

$$\text{Profit \%} = 25\%$$

$$\text{C.P} = \frac{100}{100+25} \times 320$$

$$= \text{Rs. } 320$$

The actual cost price of the article is Rs.320.

Question 10

A tradesman marks his goods at such a price that after allowing a discount of 15%, he makes a profit of 20%. What is the marked price of an article whose cost price is Rs.170?

Solution

Given,

$$\text{C.P of the article} = \text{Rs. } 170$$

$$\text{Profit} = 20\%$$

$$\text{We know that, S.P} = \frac{120}{100} \times 170$$

$$= \text{Rs. } 204$$

Let the M.P of the article be Rs. x

$$\text{Discount} = 15\%$$

Therefore, discount = 15% of x

$$= \frac{15}{100} \times x$$

$$= 0.15x$$

$$\text{M.P} = \text{S.P} + \text{discount}$$

$$\text{M.P} = \text{Rs. } 240$$

The marked price of the article is Rs.240.

Question 11

A shopkeeper marks his goods at such a price that after allowing a discount of 25% on the marked price, he still makes a profit of 50%. Find the ratio of the C.P to the M.P

Solution

Let the C.P be Rs. x

Let the M.P be Rs. y

$$\text{Gain \%} = 50\%$$

$$\text{S.P} = \frac{100}{100+50} \times x$$

$$= 32x$$

$$\text{Discount} = 25\%$$

Discount = 25% of y

$$= \frac{25}{100} \times y$$

$$= \text{Rs. } 0.25y$$

$$\text{S.P} = \text{M.P} - \text{discount}$$

$$= y - 0.25y$$

$$= 0.75y$$

$$\text{Also, S.P} = 32x$$

Comparing both the values for S.P we get,

$$32x = \frac{0.75y}{xy}$$

$$\text{C.P: M.P} = 1:2$$

Question 12

A cycle dealer offers a discount of 10% and still makes a profit of 26%. What is the actual cost to him of a cycle whose marked price is Rs.840?

Solution

Given,

M.P of the cycle = Rs.840

Discount = 10%

So, S.P = M.P – discount

$$= 840 - \frac{10}{100}$$

= Rs. 756

S.P = Rs.756

Gain = 26%

$$C.P = \frac{100}{100+26} \times 756$$

$$= \frac{100}{126} \times 756$$

= Rs. 600

Hence, the C.P of the cycle is Rs. 600

Question 13

A shopkeeper allows 23% on commission on his advertised price and still makes a profit of 10%. If he gains Rs.56 on one item, find his advertised price.

Solution

Let the C.P of the item be = Rs .x

Profit% = 10%

Profit = 10% Of x

$$= \frac{110x}{100}$$

= Rs. 1.1x

Again, Profit = S.P – C.P

= Rs. (1.1x-x) = Rs. 0.1x

We get,

= 0.1x = 56

= x= Rs.560

The advertised price = Rs.800

The advertised price of the item is Rs. 800

Question 14

A shopkeeper marks his goods at 40% above the cost price but allows a discount of 5% for cash payment to his customers. What actual profit does he make, if he receives Rs.1064 after paying the discount?

Solution

Let the original cost price of the item be Rs. x

Profit = 40%

$$Profit = \frac{40}{100}$$

M.P = x+ 0.40x=1.4x

Discount = M.P – S.P

= Rs. 800.

Profit = Rs.(1064-800)

=Rs. 264

The actual profit by the shopkeeper is Rs. 264

Question 15

By selling a pair of earrings at a discount of 25% on the marked price, a jeweler makes a profit of 16%. If the profit is Rs. 48, what is the cost price? What is the marked price and the price at which the pair was eventually bought?

Solution

Let the cost price of the pair of the earrings be Rs. x

Profit = 16%

$$S.P = \frac{116}{100} \times C.P$$

Profit = S.P – C.P

$$= \frac{116}{100} \times C.P - C.P$$

$$16x = 4800$$

$$= x = 300$$

$$\frac{116x}{100} = 348$$

$$\text{Discount} = \frac{34800}{75}$$

$$= \text{Rs. } 464$$

Thus, C.P of the pair of earrings = Rs. x = Rs. 300

S.P of the pair of earrings = Rs. 348

M.P of the pair of earrings = Rs. 464

Question 16

A publisher gives 32% discount on the printed price of a book to booksellers. What does a bookseller pay for a book whose printed price is Rs. 275?

Solution

Discount allowed by the publisher = 32% on the printed price

Printed price = Rs. 275

So, 32% of Rs. 275

$$= \frac{32}{100} \times \text{Rs. } 275$$

$$= \text{Rs. } 88$$

The bookseller pays = Rs. 275 – Rs. 88

$$= \text{Rs. } 187$$

The bookseller pays Rs. 187 for a book.

Question 17

After allowing a discount of 20% on the marked price of a lamp, a trader loses 10%. By what percentage is the marked price above the cost price?

Solution

Let the C.P of the lamp be Rs. 100

Loss = 10% of C.P

S.P = C.P – loss

$$= \text{Rs. } 100 - \text{Rs. } 10$$

$$= \text{Rs. } 90$$

The trader allows a discount of 20%

This means when the M.P is Rs. 100, the S.P will be Rs. 80

Now, Rs. 80 is the S.P, the M.P = Rs. 100

$$\text{If Re. } 1 \text{ is the S.P, then M.P} = \text{Rs. } \frac{100}{80}$$

$$\text{Rs. } 90 \text{ is the S.P then, M.P} = \text{Rs. } \frac{100}{80} \times 90$$

$$= \text{Rs. } 112.50$$

Hence, the trader marks his goods at 12.5% above the cost price.

Question 18

The list price of a table fan is Rs.480 and it is available to a retailer at 25% discount. For how much should a retailer sell it to gain 15%?

Solution

Marked price of the table= Rs. 480

Discount = 25%

Therefore, cost price = 25% of Rs. 480

$$= \frac{125}{100} \times 480$$

$$= \text{Rs. } 360$$

It is given that the profit on the table fan is 15%

Gain = Rs. 54

$$\text{S.P} = \text{Rs. } 364 + \text{Rs. } 54$$

$$= \text{Rs. } 414$$

Thus, the retailer will sell the table fan for Rs. 414

Question 19

Rohit buys an item at 25% discount on the marked price. He sells it for Rs.660, making a profit of 10%. What is the marked price of the item?

Solution

Given, S.P of the item = Rs. 660

Discount on the item = 25%

Profit on the item = 10%

Discount = 25% of S.P

$$\text{Discount} = \frac{660}{100-25} \times 100$$

$$= \text{Rs. } 880$$

Thus, the marked price of the item is Rs. 880

Question 20

A cycle merchant allows 20% discount on the marked price of the cycles and still makes a profit of 20%. If he gains Rs.360 over the sale of one cycle, find the marked price of the cycle?

Solution

Given, gain on one cycle = Rs. 360

Gain = 20%

$$\text{S.P} = \frac{120}{100} \times 1800$$

$$= \text{Rs. } 2160$$

$$\text{M.P} = \frac{\text{S.P}}{100} \times 100 - \text{discount}\%$$

$$\text{M.P} = \frac{2160}{80} \times 100$$

$$= \text{Rs. } 2700$$

Hence, the M.P of one cycle is Rs. 2700

Question 21

Jyoti and Meena run a ready – made garment shop. They mark the garments at such a price that even after allowing a discount of 12.5%, they make a profit of 10%. Find the marked price of a suit which costs them Rs.1470.

Solution

Given, C.P of the suit = Rs 1470

Gain = 10%

$$\text{S.P} = 100 + \frac{\text{Gain}}{100} \times \text{C. P}$$

$$= 100 + \frac{10}{100} \times 1470$$

$$= \text{Rs. } 1617$$

$$\text{Discount} = 12.5\%$$

$$\text{So, M.P} = \frac{\text{S.P}}{100} \times 100 - \text{discount}$$

$$= \frac{1617}{100} \times 100 - 12.5$$

$$= \text{Rs. } 1848$$

Therefore, the marked price of the suit is Rs. 1848.

Question 22

What price should Aslam mark on a pair of shoes which costs him Rs.1200 so as to gain 12% after allowing a discount of 16%?

Solution

Given, C.P of the pair of shoes = Rs. 1470

$$\text{Gain} = 12\%$$

$$\text{Discount} = 16\%$$

$$\text{So, S.P} = \frac{\text{Gain}}{100} \times \text{C.P} + 100$$

$$= \text{Rs. } \frac{12}{100} \times 1470 + 100$$

$$= \text{Rs. } 1344$$

Now, the S.P of the pair of shoes = Rs. 1344

$$\text{Discount} = 16\%$$

$$\text{So, M.P} = \frac{1344}{100} \times 100 - 16$$

$$= \text{Rs. } 1600$$

Aslam should sell the pair of shoes for Rs. 1600

Question 23

Jasmine allows 4% discount on the marked price of her goods and still earns a profit of 20%. What is the cost price of a shirt for her marked as Rs.850?

Solution

Given,

$$\text{M.P of the shirt} = \text{Rs. } 850$$

$$\text{Discount} = 4\%$$

$$\text{Discount allowed} = \frac{4}{100} \times 850.$$

$$= \text{Rs. } 34$$

Thus, the S.P of the shirt = Rs.850 – Rs.34

$$= \text{Rs. } 816$$

Profit earned by jasmine = 20%

$$\text{Thus, C.P} = \frac{\text{S.P}}{100} \times 100 + \text{profit}\%$$

$$= \frac{816}{100} \times 100 + 20$$

$$= \text{Rs. } 680$$

Thus, the cost price of the shirt is Rs. 680

Question 24

A shopkeeper offers 10% off-season discount to the customers and still makes a profit of 26%. What is the cost price for the shopkeeper on a pair of shoes marked at Rs.1120?

Solution

Given,

$$\text{M.P of the pair of shoes} = \text{Rs. } 1120$$

$$\text{Discount} = 10\%$$

$$\text{So, S.P} = \frac{\text{M.P}}{100} - \text{discount\%}$$

$$= \frac{90}{100} \times 1120$$

$$= \text{Rs. } 1008$$

$$\text{Therefore, C.P} = \frac{\text{S.P}}{100} \times 100 + \text{profit\%}$$

$$= \frac{1008}{100} \times 10 + 26$$

$$= \text{Rs. } 800$$

The cost price of the pair of shoes will be Rs. 800

Question 25

A lady shopkeeper allows her customers 10% discount on the marked price of the goods and still gets a profit of 25%. What is the cost price of a fan for her marked at Rs.1250?

Solution

Given,

$$\text{M.P of the fan} = \text{Rs. } 1250$$

$$\text{Discount} = 10\%$$

$$\text{So, discount} = 10\% \text{ of } 1250$$

$$= \frac{10}{100} \times 1250$$

$$= \text{Rs. } 125$$

$$\text{Since, S.P} = \text{M.P} - \text{discount}$$

$$= \text{Rs. } 1250 - \text{Rs. } 125$$

$$= \text{Rs. } 1125$$

$$\text{S.P of the fan} = \text{Rs. } 1125$$

$$\text{Profit \%} = 25\%$$

$$\text{C.P} = \frac{100}{100+25} \times 1125$$

$$= \frac{100}{125} \times 1125$$

$$= \text{Rs. } 900$$

Thus the cost price of the fan is Rs. 900