EXERCISE 11A

PAGE: 157

1. Find the SP when:

(i). CP = ₹ 950, gain = 6%

Solution:-

We have,

SP = {((100 + gain %) /100) × CP)}
= {((100 + 6) /100) × 950)}
= {(106 /100) × 950}
= 100700/100
= ₹1007

(ii). CP = ₹ 9600, gain = 16(2/3) %

Solution:-

We have,

SP = {((100 + gain %) /100) × CP)}
= {((100 + (50/3)) /100) × 9600)}
= {(((300 + 50)/3)) /100) × 9600)}
= {((350/3) /100) × 9600}
= {((350/3) × (1/100)) × 9600}
= {(350/300) × 9600}
= {(350/3) × 96}
= {350 × 32}
= ₹11200

(iii). CP = ₹ 1540, loss = 4%

Solution:-

We have,

SP = {((100 - loss %) /100) × CP)}
= {((100 - 4) /100) × 1540)}
= {(96 /100) × 1540}
= 147840/100
= ₹1478.40

(iv). CP = ₹ 8640, loss = 12(1/2) %

Solution:-

We have,

SP = {((100 - loss %) /100) × CP)}
= {((100 - (25/2)) /100) × 8640)}
= {(((200 - 25)/2)) /100) × 8640)}
= {((175/2) /100) × 8640}
= {((175/2) × (1/100)) × 8640}
= {(175/200) × 8460}

= {1512000/200}
= ₹7560

2. Find the gain or loss percent when:
(i). CP = ₹ 2400 and SP = ₹ 2592
Solution:-
Since (SP) > (CP), so there is a gain
Gain = (SP) – (CP)
= ₹ (2592-2400)
= ₹ 192
Gain % = {(gain/CP) × 100}
= {(192/2400) × 100}
= {192/24}
= 8%

(ii). CP = ₹ 1650 and SP = ₹ 1452
Solution:-
Since (SP) < (CP), so there is a loss
Loss = (CP) – (SP)
= ₹ (1650 - 1452)
= ₹ 198
Loss % = {(Loss/CP) × 100}
= {(198/1650) × 100}
= {19800/1650}
= 12%

(iii). CP = ₹ 12000 and SP = ₹ 12800
Solution:-
Since (SP) > (CP), so there is a gain
Gain = (SP) – (CP)
= ₹ (12800 - 12000)
= ₹ 800
Gain % = {(gain/CP) × 100}
= {(800/12000) × 100}
= {800/120}
= 6(2/3) %

(iv). CP = ₹ 1800 and SP = ₹ 1611
Solution:-
Since (SP) < (CP), so there is a loss
Loss = (CP) – (SP)
= ₹ (1800 - 1611)
= ₹ 189

Loss % = {(Loss/CP) × 100}
= {(189/1800) × 100}
= {189/18}
= 10(1/2)%

3. Find the CP when:
(i). SP = ₹ 924, gain = 10%
Solution:-
By using the formula, we have:
CP = ₹ {(100/ (100 + gain %)) × SP}
= {(100/ (100 + 10)) × 924}
= {(100/ 110) × 924}
= {92400/110}
= ₹ 840

(ii). SP = ₹ 1755, gain = 12(1/2) %
Solution:-
Gain = 12(1/2) = 25/2
By using the formula, we have:
CP = ₹ {(100/ (100 + gain %)) × SP}
= {(100/ (100 + (25/2))) × 1755}
= {(100/ ((200 + 25)/2)) × 1755}
= {(200/ 225) × 1755}
= {351000/225}
= ₹ 1560

(iii). SP = ₹ 8510, loss = 8%
Solution:-
By using the formula, we have:
CP = ₹ {(100/ (100 - loss %)) × SP}
= {(100/ (100 - 8)) × 8510}
= {(100/ 92) × 8510}
= {851000/92}
= ₹ 9250

(iv). SP = ₹ 5600, loss = 6(2/3) %
Solution:-
Loss = 6(2/3) = 20/3
By using the formula, we have:
CP = ₹ {(100/ (100 – loss %)) × SP}
= {(100/ (100 - (20/3))) × 5600}
= {(100/ ((300 - 20)/3)) × 5600}
= {(300/ 280) × 5600}

= {168000/280}
= ₹ 6000

4. Sudhir bought an almirah for ₹ 13600 and spent ₹ 400 on its transportation. He sold it for ₹ 16800. Find his gain percent.

Solution:-

From the question,
Sudhir bought an almirah for = ₹ 13600 = cost price
Transportation cost = ₹ 400
The total cost price of almirah = ₹ (13600 + 400)
= ₹ 14000
He sold it for = ₹ 16800 = Selling price
By comparing SP and CP = SP > CP, so there is a gain
Gain = SP – CP
= 16800 – 14000
= ₹ 2800
Gain % = {(gain/CP) × 100}
= {(2800/14000) × 100}
= {2800/140}
= 20%

5. Ravi purchased an old house for ₹765000 and spent ₹115000 on its repairs. Then, he sold it a gain of 5%. How much did he get?

Solution:-

From the question,
Ravi purchased an old house for = ₹ 765000 = Cost price
He spent on its repairs = ₹ 115000
Total cost price of old house = (765000 + 115000)
= ₹ 880000
Then, he sold it at a gain of 5%
SP = {((100 + gain %) /100) × CP)}
= {((100 + 5) /100) × 880000)}
= {(105 /100) × 880000}
= 105 × 8800
= ₹ 924000
∴the selling price of the house is ₹ 924000

6. A vendor buys lemons at ₹25 per dozen and sells them at the rate of 5 for ₹ 12. Find his gain or loss percent.

Solution:-

Cost price of 12 lemons = ₹25
Then, cost price of 1 lemon = ₹ (25/12)
Cost price of 5 lemons = (25/12) × 5

= 125/12
= ₹ 10.42

He sold 5 lemons for = ₹12 =Selling price
By comparing SP and CP = SP > CP, so there is a gain
Gain = SP – CP
= 12 – 10.42
= ₹ 1.58
Gain % = {(gain/CP) × 100}
= {(1.58/10.42) × 100}
= {15800/1042}
= 15.2%

7. The selling price of 12 pens is equal to the cost price of 15 pens. Find the gain percent.
Solution:-
Let the cost price of 1 pen = ₹ 1
So, cost price of 12 pens = ₹ 12
SP of 15 pens = ₹ 15
From the question,
Selling price of 12 pens = cost price of 15 pens
Gain = SP – CP
= 15 -12
= ₹ 3
Gain % = {(gain/CP) × 100}
= {(3/12) × 100}
= {300/12}
= 25%

8. The selling price of 16 spoons is equal to the cost price of 15 spoons. Find the loss percent.
Solution:-
Let the cost price of 1 spoon = ₹ 1
So, cost price of 16 pens = ₹ 16
SP of 15 spoons = ₹ 15
From the question,
Selling price of 16 spoons = cost price of 15 spoons
Loss = (CP) – (SP)
= ₹ (16 - 15)
= ₹ 1
Loss % = {(Loss/CP) × 100}
= {(1/16) × 100}
= {100/16}
= 6.25%
= 6(1/4) %

9. Manoj purchased a video for ₹12000. He sold it to Rahul at a gain of 10%. If Rahul sells it to Rakesh at a loss of 5%, what did Rakesh pay for it?

Solution:-

From the question,

Manoj purchased a video for = ₹ 12000 = Cost price

He sold it to Rahul at a gain of = 10 %

Selling price of video from Manoj to Rahul,

SP = {((100 + gain %) /100) × CP)}

= {((100 + 10) /100) × 12000)}

= {(110 /100) × 12000}

= 110 × 120

= ₹ 13200

∴Selling price of video from Manoj to Rahul is ₹ 13200

Then, Rahul purchase a video from Manoj at cost price of = ₹ 13200

Rahul sells it to Rakesh at Percentage of loss = 5%

Selling price of video when Rahul sells it to Rakesh,

SP = {((100 - loss %) /100) × CP)}

= {((100 - 5) /100) × 13200)}

= {(95 /100) × 13200}

= {95 × 132}

= ₹12540

∴Rakesh pay for a video is ₹12540

10. On selling a sofa-set for ₹ 21600, a dealer gains 8%. For how much did he purchase it?

Solution:-

From the question,

Dealer selling a sofa-set for = ₹21600 = Selling price

He gains on selling = 8%

Cost price of sofa-set,

CP = ₹ {(100/ (100 + gain %)) × SP}

= {(100/ (100 + 8)) × 21600}

= {(100/ 108) × 21600}

= {2160000/108}

= ₹ 20000

11. On selling a watch for ₹ 11400, a shopkeeper loses 5%. For how much did he purchase it?

Solution:-

From the question,

Shopkeeper selling a watch for = ₹11400 = Selling price

He loses on selling = 5%

Cost price of watch,

CP = ₹ {(100/ (100 - loss %)) × SP}

= {(100/ (100 - 5)) × 11400}

= {(100/ 95) × 11400}
= {11400} × 95
= ₹ 12000

EXERCISE 11B PAGE: 158

Mark against the correct answer in each of the following:

1. A man buys a book for ₹ 80 and sells it for ₹ 100. His gain % is,

(a) 20% (b) 25% (c) 120 (d) 125%

Solution:-

(b) 25%

Because,

Cost price of book = ₹ 80

Selling price of book = ₹ 100

Since (SP) > (CP), so there is a gain

Gain = (SP) – (CP)

= ₹ (100 - 80)

= ₹ 20

Gain % = {(gain/CP) × 100}

= {(20/80) × 100}

= {(20/20) × 25}

= 25%

2. A football is bought for ₹ 120 and sold for ₹ 105. The loss % is

(a) 12(1/2)% (b) 14(2/7)% (c) 16(2/3)% (d) 13(1/3)%

Solution:-

(a) 12(1/2)%

Because,

Cost price of football = ₹ 120

Selling price of football = ₹ 105

Since (SP) < (CP), so there is a loss

Loss = (CP) – (SP)

= ₹ (120 - 105)

= ₹ 15

Loss % = {(Loss/CP) × 100}

= {(15/120) × 100}

= {(15/12) ×10}

= {150/12}

=12.5%

= 12(1/2)%

3. On selling a bat for ₹ 100, a man gains ₹20. His gain % is

(a) 20% (b) 25% (c) 18% (d) 22%

Solution:-

(b) 25%

Because,

Selling price of bat = ₹ 100

Amount gain by selling bat = ₹20
Cost price of the bat = (100 – 20)
= ₹ 80
Gain % = {(gain/CP) × 100}
= {(20/80) × 100}
= {(20/20) × 25}
= 25%

4. On selling a racket for ₹198, a shopkeeper gains 10%. The cost price of the racket is
(a) ₹180 (b) ₹178.20 (c) ₹217.80 (d) ₹212.50
Solution:-
(a) ₹180
Because,
Selling price of racket = ₹ 198
Percentage gain by selling racket = 10%
Cost price of the racket,
CP = ₹ {(100/ (100 + gain %)) × SP}
= {(100/ (100 + 10)) × 198}
= {(100/ 110) × 198}
= {19800/110}
= ₹ 180

5. On selling a jug for ₹ 144, a man loses (1/7) of his outlay. If it is sold for ₹ 189, what is the gain %?
(a) 12.5% (b)25% (c) 30% (d)50%
Solution:-
(a) 12.5%
Because,
Let the CP be, ₹ x
Then, x – (1/7)x = 144
= (7x –x) = (144 × 7)
= x = (144 ×7)/6
= x = 168
∴ CP = ₹ 168,
New SP = ₹189
Gain = SP –CP
= 189 – 168
= 21
Gain % = {(gain/CP) × 100}
= {(21/168) × 100}
= {2100/168)
= 12.5%

6. On selling a pen for ₹ 48, a shopkeeper loses 20%. In order to gain 20% what would be the selling

price?

(a) ₹ 52 **(b) ₹ 56** **(c) ₹ 68** **(d) ₹ 72**

Solution:-

(d) ₹ 72

Because,

Selling price of pen = ₹ 48

Shopkeeper loses = 20%

Cost price of pen =

CP = ₹ {(100/ (100 - loss %)) × SP}

= {(100/ (100 - 20)) × 48}

= {(100/ 80) × 48}

= {4800/80}

= ₹ 60

In order to gain 20%,

SP = {((100 + gain %) /100) × CP)}

= {((100 + 20) /100) × 60)}

= {(120 /100) × 60}

= ₹ 72