## NCERT Solutions for Class 7 Maths Chapter 8 Comparing Quantities Ex 8.3

Ex 8.3 Class 7 Maths Question 1.
Tell what is the profit or loss in the following transactions. Also find profit per cent or loss per cent in each case.
(a) Gardening shears bought for ₹ 250 and sold for ₹ 325.
(b) A refrigerator bought for ₹ 12,000 and sold at ₹ 13,500 .
(c) A cupboard bought for ₹ 2,500 and sold at ₹ 3,000 .
(d) A skirt bought for ₹ 250 and sold at ₹ 150 .

Solution:
(a) Here, CP = ₹ 250

SP = ₹ 325
Since SP > CP
$\therefore$ Profit $=\mathrm{SP}-\mathrm{CP}$
= ₹ 325 - ₹ 250 = ₹ 75

$$
\begin{aligned}
\therefore \quad \text { Profit } \% & =\frac{\text { Profit } \times 100}{\text { CP }} \\
& =\frac{75}{250} \times 100=30 \%
\end{aligned}
$$

Hence, the required profit = ₹ 75
and Profit per cent $=30 \%$
(b) Here, CP = ₹ 12,000

SP = ₹ 13,500
Since SP > CP
$\therefore$ Profit $=\mathrm{SP}-\mathrm{CP}$
= ₹ 13,500-₹ $12,000=₹ 1,500$

$$
\begin{aligned}
\text { Profit } \% & =\frac{\text { Profit }}{\mathrm{CP}} \times 100=\frac{1500 \times 100}{12000} \\
& =\frac{25}{2} \%=12 \frac{1}{2} \%
\end{aligned}
$$

Hence, the required profit = ₹ $1500 \times 100$
profit $\%=12 \frac{1}{2} \%$
(c) Here, CP = ₹ 2500

SP = ₹ 3000
Since SP > CP
$\therefore$ Profit $=S P-C P$
= ₹ 3000 - ₹ $2500=₹ 500$
$\therefore \quad$ Profit $\%=\frac{\text { Profit }}{\text { CP }} \times 100$

$$
=\frac{500}{2500} \times 100=20 \%
$$

Hence, the required profit = ₹ 500 and profit $\%=20 \%$
(d) Here, CP = ₹ 250

SP = ₹ 150
Here CP > SP
$\therefore$ Loss $=\mathrm{CP}-\mathrm{SP}$
= ₹ 250 - ₹ 150 = ₹ 100
$\operatorname{Loss} \%=\frac{\text { Loss } \times 100}{\mathrm{CP}}=\frac{100 \times 100}{250}=40 \%$

Hence, the required loss = ₹ 100 and loss\% = 40\%

Ex 8.3 Class 7 Maths Question 2.
Convert each part of the ratio to Percentage:
(a) $3: 1$
(b) $2: 3: 5$
(c) $1: 4$
(d) 1:2:5

Solution:
(a) $3: 1$

Sum of the ratio parts $=3+1=4$
Percentage of first part $=\frac{3}{4} \times 100=75 \%$
Percentage of second part $=\frac{1}{4} \times 100=25 \%$
(b) $2: 3: 5$

Sum of the ratio parts $=2+3+5=10$
Percentage of first part $=\frac{2}{10} \times 100=20 \%$
Percentage of second part $=\frac{3}{10} \times 100=30 \%$
Percentage of third part $=\frac{5}{10} \times 100=50 \%$
(c) $1: 4$

Sum of the ratio parts $=1+4=5$
Percentage of first part $=\frac{1}{5} \times 100=20 \%$
Percentage of second part $=\frac{4}{5} \times 100=80 \%$
(d) $1: 2: 5$

Sum of the ratio parts $=1+2+5=8$
Percentage of first part $=\frac{1}{8} \times 100=12 \frac{1}{2} \%$
Percentage of second part $=\frac{2}{8} \times 100=25 \%$
Percentage of third part $=\frac{5}{8} \times 100=62 \frac{1}{2} \%$

Ex 8.3 Class 7 Maths Question 3.
The population of a city decreased from 25,000 to 24,500 . Find the Percentage decrease.
Solution:
Initial population $=25,000$
Decreased population $=24,500$
Decrease in population
$=25,000-24,500=500$
Percentage of decrease $=\frac{500 \times 100}{25000}=2 \%$
Hence the Percentage of decrease in population $=2 \%$.

Ex 8.3 Class 7 Maths Question 4.
Arun bought a car for ₹ $3,50,000$. The next year, the price went upto ₹ $3,70,000$. What was the Percentage of price increase?
Solution:
Original price of the car $=₹ 3,50,000$
Price increased next year $=₹ 3,70,000$
Increase in price = ₹ 3,70,000 - ₹ 3,50,000
= ₹ 20,000
$\therefore$ Percentage of the increase in the price

$$
=\frac{20,000 \times 100}{3,50,000}=\frac{40}{7} \%=5 \frac{5}{7} \%
$$

Hence, the Percentage of increase in price $=5 \frac{5}{7} \%$

Ex 8.3 Class 7 Maths Question 5.
I buy a TV for ₹ 10,000 and sell it at a profit of $20 \%$. How much money do I get for it?
Solution:
Here, CP = ₹ 10,000
Profit $=20 \%$
SP = ?

$$
\begin{aligned}
\text { SP } & =C P\left(1+\frac{\text { Profit }}{100}\right)=10,000\left(1+\frac{20}{100}\right) \\
& =10,000 \times \frac{6}{5}=₹ 12,000
\end{aligned}
$$

Hence, the required money got by me = ₹ 12,000 .

Ex 8.3 Class 7 Maths Question 6.
Juhi sells a washing machine for ₹ 13,500 . She loses $20 \%$ in the bargain. What was the price at which she bought it?

Solution:
SP of the washing machine $=₹ 13,500$
Loss $=20 \%$
$C P=$ ?

$$
\begin{array}{rlrl}
\mathrm{SP} & =\mathrm{CP}\left(1-\frac{\text { Loss }}{100}\right) \\
13500 & =\mathrm{CP}\left(1-\frac{20}{100}\right) \\
\Rightarrow \quad 13500 & =\mathrm{CP}\left(1-\frac{1}{5}\right) \\
\Rightarrow \quad 13500 & =\mathrm{CP} \times \frac{4}{5} \\
\therefore & & \mathrm{CP} & =13500^{3375} \times \frac{5}{4} \\
& & =3375 \times 5=₹ 16875
\end{array}
$$

Hence, the cost price of the machine $=₹ 16875$.

## Ex 8.3 Class 7 Maths Question 7.

(i) Chalk contains calcium, carbon and oxygen in the ratio $10: 3: 12$. Find the Percentage of carbon in chalk.
(ii) If in a stick of chalk, carbon is 3 g , what is the weight of the chalk stick?

Solution:
(i) Sum of the ratio parts $=10+3+12=25$
$\therefore$ Percentage of carbon in chalk
$==\frac{3}{25} \times 100 \%=12 \%$
Hence, the Percentage of carbon in chalk $=12 \%$
(ii) Weight of carbon $=3 \mathrm{~g}$
$\therefore$ Weight of chalk $==\frac{3}{3} \times 25 \mathrm{~g}=25 \mathrm{~g}$
Hence, the weight of chalk $=25 \mathrm{~g}$

## Ex 8.3 Class 7 Maths Question 8.

Amina buys a book for ₹ 275 and sells it at a loss of $15 \%$. How much does she sell it for?
Solution:
CP of book = ₹ 275
Loss = 15\%

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\begin{aligned}
\therefore \quad \mathrm{SP} & =\mathrm{CP}\left(1-\frac{\text { Loss }}{100}\right)=275\left(1-\frac{15}{100}\right) \\
& =275 \times \frac{85^{17}}{100_{20}}=\frac{4675}{20}=₹ 233.75
\end{aligned}
$$

Hence, the required selling price = ₹ 233.75

Ex 8.3 Class 7 Maths Question 9.
Find the amount to be paid at the end of 3 years in each case.
(a) Principal $=₹ 1200$ at $12 \%$ p.a.
(b) Principal = ₹ 7500 at $5 \%$ p.a.

Solution:
(a) Given: Principal = ₹ 1200

Rate of interest $=12 \%$ p.a., $T=3$ years
$\therefore$ Interest $=\frac{\mathrm{P} \times \mathrm{R} \times \mathrm{T}}{100}=\frac{1200 \times 12 \times 3}{100}$
Amount $=$ Principal + Interest
= ₹ 1200 + ₹ 432 = ₹ 1632
Hence, the required amount $=₹ 1632$
(b) Given: Principal = ₹ 7500

Rate $=5 \%$ p.a.
Time $=3$ years
$\therefore$ Interest $=\frac{\mathrm{P} \times \mathrm{R} \times \mathrm{T}}{100}=\frac{7500 \times 5 \times 3}{100}$
= ₹ 1125
Amount $=$ Principal + Interest
= ₹ $7500+11125$ = ₹ 8625
Hence, the required amount = ₹ 8625.

Ex 8.3 Class 7 Maths Question 10.
What rate gives ₹ 280 as interest on a sum of ₹ 56,000 in 2 years?
Solution:
Given: Principal = ₹ 56,000
Interest = ₹280
Time $=2$ years
Rate $=$ ?

$$
\begin{aligned}
\text { Rate } & =\frac{100 \times \mathrm{I}}{\mathrm{P} \times \mathrm{T}}=\frac{100 \times 280}{56,000 \times 2} \\
& =\frac{1}{4} \% \text { or } 0.25 \%
\end{aligned}
$$

Hence, the required rate $=0.25 \%$

## Ex 8.3 Class 7 Maths Question 11.

If Meena gives an interest of ₹ 45 for one year at $9 \%$ rate p.a. What is the sum she has borrowed?
Solution:
Given: Interest = ₹ 45
Time $=1$ year
Rate $=9 \%$ p.a.

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\text { Principal }=\frac{100 \times \mathrm{I}}{\mathrm{R} \times \mathrm{T}}=\frac{100 \times 45}{9 \times 1}=₹ 500
$$

Hence, the required sum = ₹ 500 .

