Doon Public School, Bhuj

Home Assignment

Class: VIII

Subject: Maths

Solved examples from the exercise:

Dear students,

This is your home assignment which you have to complete in your mathematics notebook. Write all the questions from the exercise in your notebook. Some sums have been solved in this worksheet. You have to write the solved sums, and the remaining sums you will solve and write yourselves. The notebooks will be checked on the reopening of the school. Manage your time effectively as time is free, but is priceless. Take care and stay safe

Chapter 9th : Applications to percentages

Exercise 9.1

Q.1

(b) $66\frac{2}{3}\% = \frac{200}{3} \times \frac{1}{100} = \frac{2}{3}$

Q.2

(b) $\frac{3}{4} = \frac{3}{4} \times 100 = 75\%$

Q.3

(b) $10\frac{2}{3}\% = \frac{32}{3}$

$\frac{32}{3}\%$ of ₹1800 = $\frac{32}{3 \times 100} \times 1800$ = ₹192

Q.5

Total students appearing for exam= 1200+ 1300 = 2500

Percentage of boys appearing for the exam = $\frac{1200}{2500} \times 100 = 48\%$

Percentage of girls appearing for the exam = $\frac{1300}{2500} \times 100 = 52\%$

Q.6

Let maximum marks be X

$\frac{75}{100} \times X = 180$

$\frac{3}{4} \times X = 180$

$X = \frac{180 \times 4}{3} = 240$

Maximum marks=240

Exercise 9.2

Q.1 Let the original salary be x

8% increase in original salary is x + 8% of x =1,51,200

$\frac{100x+8x}{100}$ = 151200

$\frac{108}{100}x$=151200

x= 1,40,000₹

Q.3 Marked price = ₹1750

Discount = 8% of ₹1750

= $\frac{1750\times8}{100}$ =₹140

Sales price = Marked price – discount

= 1750 – 140 = ₹1610

So, sales price is ₹1610

Q.6

Marked price = ₹3750

Sales price = ₹ 3200

Discount = 3750 – 3200 = ₹550

Discount in % = $\frac{550}{3750}\times 100 = 14\frac{2}{3}\%$

Q.7

Cost price of the mixer = ₹2575

For (a) cost of gift = ₹300

For (b)

Discount = 5% of ₹2575

$= \frac{2575 \times 5}{100}$ = 128.75₹

So, (a) is the best offer since there is benefit of ₹300

Exercise 9.3

Q.1 (a)

Cost price = ₹2500

Gain = $5\frac{1}{2}$% of ₹2500

$= \frac{11}{2} \times . \frac{2500}{100}$ = 137.5₹

Sale price = cost price + gain

= 2500 + 137.5

= 2637.5₹

Q.2 (a)

Sales price = ₹500

Gain = 5%

CP = SP× $\frac{100}{100+gain\ \%}$

= 500×$\frac{100}{100+5}$

= ₹476.19

Q.3 (a)

Sp = ₹270

Cp = ₹200

Sp is greater than Cp

Hence profit

Profit = SP – CP = 270 – 200 =70₹

Profit % = $\frac{70}{200} \times 100 = 35\%$

Hence gain is 35%

Q.7

Cost of 1 egg = ₹4

Cost of 4 dozen eggs = 4×12×4 = ₹192

7 eggs were broken

So, remaining eggs = 48 – 7 =41

Selling price for 41 eggs in such a way that there is 10% gain,

Sp = Cp ×$\frac{gain\ in\ \%+100}{100}$

= 192×$\frac{10+100}{100}$

= 211.2₹

SP of 1 egg = $\frac{211.2}{41} = 5.15$₹

SP of 1 dozen eggs = 5.15 × 12 = 61.8₹

Q.10

For 1st almairah,

CP = ₹11,500

A.E = 250

Total CP = 11500 + 250 = 11750

Gain% = 10%

SP = CP × $\frac{100+gain\%}{100}$

SP = 11750× $\frac{100+10}{100}$

= 12925₹

For 2nd almairah

Total CP = 11750

Loss = 2%

SP = CP × $\frac{100-loss\%}{100}$

= 11750×$\frac{100-2}{100}$

=11515₹

Overall CP = 11750+11750 = 23500₹

Overall SP = 12925 + 11515 = 24440₹

SP is greater than CP, hence it is profit

Profit = SP – CP = 24440 – 23500 = 940₹

Gain % = $\frac{940\times100}{23500}$ = 4%

Exercise 9.4

Q.3

CP = ₹500

Gain = $12\frac{1}{2}$% = 12.5%

SP = CP × $\frac{100+gain\%}{100}$

= 500 × $\frac{100+12.5\%}{100}$

= 562.5₹

ST = 15%

Actual selling price = $\frac{562.5\times115}{100}$ = 646.87₹

Q.5

SP = 15660

VAT = 8%

CP = $\frac{15660\times100}{108}$ = 14,500

REVISION TIME

Q.6

SP = 2600

Discount = 35%

CP = $\frac{2600\times100}{100-35}$ = 4000₹

Q.9

Let CP be x

Profit is 5% of x

SP = CP $\times\frac{105}{100}$

IF it was sold for 250 more, the gain was 10%

SP = CP$\times\frac{110}{100}$

CP$\times\frac{110}{100}$ = $\frac{105}{100}\times CP + 250$

Solving this we get CP = 5000₹

Chapter 10: Compound interest

Exercise 10.1

(2) P = 24,000₹

n = $\frac{3}{2}\times 2$ = 3 conversion periods

R = 10% $\times\frac{1}{2}$ = 5%

A = P$\left(1+\frac{R}{100}\right)^{n}$

= 24000$\left(1+\frac{5}{100}\right)^{3}$

= 24000$(\frac{100+5}{100})^{3}$

= 24000 $\times\frac{105}{100}\times\frac{105}{100}\times\frac{105}{100}$

= 27783₹

(3) R = 12%

P = ₹12,500

N = 3 years

For simple interest:

S.I = $\frac{P\times R\times N}{100}$

= $\frac{₹12,500\times 12\times 3}{100}$

= ₹4500

For compound interest:

A = $P\left(1+\frac{R}{100}\right)^{n}$

= 12,500$\left(1+\frac{12}{100}\right)^{3}$

=17561.6 ₹

C.I = A – P

= 17561.6 – 12500

= 5061.6

Difference between C.I and S.I = 5061.6 – 4500 = ₹561.6

(4) P = ₹6000

C.I when compounded half yearly

N = $\frac{3}{2}\times 2$ = 3 terms

R = $\frac{4}{2}$ = 2%

A = $P\left(1+\frac{R}{100}\right)^{n}$

= 6000$\left(1+\frac{2}{100}\right)^{3}$

=6367.248₹

C.I when compounded quarterly

R = $\frac{4}{4}$ = 1%

N = $\frac{3}{2}$×4 = 6 terms

A = $P\left(1+\frac{R}{100}\right)^{n}$

= 6000$\left(1+\frac{1}{100}\right)^{6}$

= 6369.12₹

Difference between CI when taken yearly and half yearly = 6369.12 – 6367.248 = 1.87₹

(6) For sheela

P = ₹15,000

R = 12%

N = 3 years

$I = \frac{P \times R \times N}{100}$

$= \frac{15000 \times 12 \times 3}{100}$

= ₹5400

Calculation for renu:

P = ₹15,000

R = $10\frac{1}{2}$% = 10.5%

N = 3 years

$A = P\left(1 + \frac{R}{100}\right)^n$

$= 15000\left(1 + \frac{10.5}{100}\right)^3$

=₹20,238.48

C.I = A – P = 20,238.48 – 15,000 = 5238.48

Interest paid by renu is less than interest paid by sheela.

Hence sheela pays more interest.

Difference between both their interests = 5400 – 5238.48

= ₹161.52

Hence sheela pays ₹161.52 more than renu.

Exercise 10.2

(2) Principal = 5,25,000

Rate of growth = $3\frac{1}{2}$ = 3.5%

N = 2 hours

$A = P\left(1 + \frac{R}{100}\right)^n$

$= 5,25,000\left(1 + \frac{3.5}{100}\right)^2$

= 5,62,393.125 = 5,62,393 (rounding off)

(4) Principal = ₹62,000

Reduction = 10% p.a

N = 2 years

$A = P\left(1 - \frac{R}{100}\right)^n$

$= 62{,}000\left(1 - \frac{10}{100}\right)^2$

= ₹50,220

So, the value of two wheeler after 2 years is ₹50,220

Revision Time

(1) A = ₹9,26,100
R = 5 %
N = 3 years

$A = P\left(1 + \frac{R}{100}\right)^n$

$\rightarrow \quad 926100 = P\left(1 + \frac{5}{100}\right)^3$

$\rightarrow \quad 926100 = P\left(\frac{100+5}{100}\right)^3$

$\rightarrow 926100 = P \times \frac{105}{100} \times \frac{105}{100} \times \frac{105}{100}$

$\rightarrow P = 800000$

So, principal = ₹8,00,000

(2) A = P + I
N = 2 years
R = 12.5 %
I = 170₹

$A = P\left(1 + \frac{R}{100}\right)^n$

$\rightarrow P + I = P\left(1 + \frac{R}{100}\right)^n$

$\rightarrow P + 170 = P\left(1 + \frac{12.5}{100}\right)^2$

$\rightarrow P + 170 = \frac{100+12.5}{100} \times \frac{100+12.5}{100}$

$\rightarrow P + 170 = P \times \frac{112.5}{100} \times \frac{112.5}{100}$

$\rightarrow P + 170 = P \times \frac{1125}{1000} \times \frac{1125}{1000}$

$\rightarrow P + 170 = P \times 1.2656$

$\rightarrow 170 = 1.2656P - P$

$\rightarrow 170 = 0.2656P$

$\rightarrow P = 640₹$

(4) For two years:

$A = P\left(1 + \frac{R}{100}\right)^n$

$7396 = P\left(1 + \frac{R}{100}\right)^2$ …….(i)

For three years

$A = P\left(1 + \frac{R}{100}\right)^n$

$7950.7 = P\left(1 + \frac{R}{100}\right)^3$ ……(ii)

$\rightarrow 7950.7 = P\left(1 + \frac{R}{100}\right)^2 \times \left(1 + \frac{R}{100}\right)$

$\rightarrow 7950.7 = 7396 \times \left(1 + \frac{R}{100}\right)$ (Substituting the value from eqn. i)

$\rightarrow \frac{7950.7}{7396} = 1 + \frac{R}{100}$

$\rightarrow \frac{79507}{73960} - 1 = \frac{R}{100}$

$\rightarrow \frac{79507-73960}{73960} = \frac{R}{100}$

$\rightarrow \frac{5547}{73960} = \frac{R}{100}$, so, R = 7.5%

(9) S.I = I_1, C.I = I_2

For S.I

$I_1 = \frac{P \times R \times N}{100}$

$I_1 = \frac{P \times 15 \times 3}{100}$

$I_1 = \frac{45P}{100}$

For compound interest

$A = P\left(1 + \frac{R}{100}\right)^n$

$P + I_2 = P\left(1 + \frac{15}{100}\right)^3$

$\frac{P+I_2}{P} = \left(1 + \frac{15}{100}\right)^3$

$1 + \frac{I_2}{P} = \left(1 + \frac{15}{100}\right)^3$

$\frac{I_2}{P} = \left(\frac{115}{100}\right)^3 - 1$

$I_2 = P\left(\frac{115}{100}\right)^3 - P$

$= P(\frac{23}{20})^3 - P$

$\rightarrow I_2 - I_1 = 283.5$

$P(\frac{23}{20})^3 - P - \frac{45P}{100} = 283.5$

LCM = 8000

$\frac{(12167-8000-3600)P}{8000} = 283.5$

$P = \frac{283.5 \times 8000}{567}$ = ₹4000

So, principal = ₹4000

Prepared by Akash aatha