Exercise 14.3

Q1 On what sum will the compound Interest at 5%. per annum for 2 years compounded annually be Rs. 164 ?

Sol: Let Sum = P, R = 5%. , T = 2 years.

C.I = Rs 164

Amount at the end of 2 year

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

$$= P\left(1+\frac{5}{100}\right)^2 = P\left(1+\frac{1}{20}\right)^2$$

$$= P\left(\frac{21}{20}\right)^2 = \frac{441}{400}P$$

$\because$ $CI = A - P$

$\Rightarrow$ $164 = \frac{441}{400}P - P$

$\Rightarrow$ $164 = \frac{441P - 400P}{400}$

$\Rightarrow$ $164 = \frac{41}{400}P$ $\Rightarrow$ $P = \frac{164 \times 400}{41}$

$\Rightarrow$ $P = Rs\ 1600$

docs.aglasem.com

aglasem.com

Q.2 Find the Principal if the interest Compounded annually at the rate of 10% for two years is Rs 210.

Sol: $R = 10\%$ P.a, $T = 2$ yrs, $C.I = Rs\ 210$

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

$\Rightarrow A = P\left(1+\frac{10}{100}\right)^2 = P\left(1+\frac{1}{10}\right)^2$

$= P\left(\frac{11}{10}\right)^2$

$\Rightarrow A = \frac{121}{100} P$

$\because C.I = A - P$

$\Rightarrow 210 = \frac{121}{100} P - P$

$\Rightarrow 210 = \frac{121P - 100P}{100}$

$\Rightarrow 210 = \frac{21}{100} P \Rightarrow P = \frac{210 \times 100}{21}$

$\Rightarrow P = 1000$

$\therefore$ Principal = Rs 1000

Q3 A Sum amounts to Rs 756.25 at 10% P.a in 2 years, Compounded annually. Find the Sum.

docs.aglasem.com

aglasem.com

Sol: here, let Sum = P

$A = 756.25$, $R = 10\%$ p.a, $T = 2$ years

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

$\Rightarrow 756.25 = P\left(1+\frac{10}{100}\right)^2$

$\Rightarrow 756.25 = P\left(1+\frac{1}{10}\right)^2$

$\Rightarrow 756.25 = P\left(\frac{11}{10}\right)^2$

$\Rightarrow 756.25 = P \times \frac{121}{100}$

$\Rightarrow P = \frac{756.25 \times 100}{121}$

$= Rs\ 625$

Q-4 What sum will amounts to Rs 4913 in 18 months, if the rate of interest is $12\frac{1}{2}\%$ pa, compounded half yearly.

Sol: let Sum = P, $R = 12\frac{1}{2}\%$ p.a $= \frac{25}{2}\%$,

$T = 18$ months $= \frac{18}{12} = \frac{3}{2}$ years.

$A = P\left(1+\frac{R}{200}\right)^{2n}$

docs.aglasem.com

aglasem.com

$$\Rightarrow 4913 = P\left(1+\frac{25}{2\times 200}\right)^{2\times\frac{3}{2}}$$

$$\Rightarrow 4913 = P\left(1+\frac{1}{16}\right)^{3}$$

$$\Rightarrow 4913 = P\left(\frac{17}{16}\right)^{3} \Rightarrow \quad P = 4913 \times \left(\frac{16}{17}\right)^{3}$$

$$\Rightarrow P = 4913 \times \frac{4096}{4913}$$

$$\Rightarrow P = \text{Rs } 4096$$

Q.5 The difference between the compound interest and simple interest on a certain sum at 15% p.a for 3 years is Rs 283.50. Find the sum.

Sol: let Sum $= P$, $R = 15\%$, $T = 3$ years.

$$SI = \frac{P \times 15 \times 3}{100} = \frac{9}{20}P$$

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

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

$$= P\left\{\left(1+\frac{3}{20}\right)^{3}-1\right\} = P\left\{\left(\frac{23}{20}\right)^{3}-1\right\}$$

$$= P\left(\frac{12167}{8000}-1\right)$$

$$= P\left(\frac{12167-8000}{8000}\right)$$

$$= P\left(\frac{4167}{8000}\right)$$

docs.aglasem.com

aglasem.com

$\therefore \quad CI - SI = 283.50$

$\Rightarrow \quad \frac{4167}{8000}p - \frac{9}{20}p = 283.50$

$\Rightarrow \quad \frac{4167p - 3600p}{8000} = 283.50$

$\Rightarrow \quad 567p = 283.50 \times 8000$

$\Rightarrow p = \frac{283.5 \times 8000}{567} = Rs\ 4000$

Q6 Rachna borrowed a certain sum at the rate of 15% p.a. If she paid at the end of 2 years Rs 1290 as interest compounded annually. Find the sum she borrowed?

Sol: $C.I = Rs\ 1290, \ T = 2\ yrs, \ R = 15\%$

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

$\Rightarrow 1290 = P\left\{\left(1+\frac{15}{100}\right)^2 - 1\right\}$

$\Rightarrow 1290 = P\left\{\left(\frac{23}{20}\right)^2 - 1\right\} \Rightarrow 1290 = P\left(\frac{529}{400} - 1\right)$

$\Rightarrow 1290 = \left(\frac{529-400}{400}\right)P$

$\Rightarrow 1290 = \frac{129}{400}P$

$\Rightarrow P = \frac{1290 \times 400}{129}$

$= Rs\ 4000$

docs.aglasem.com

aglasem.com

Q.7 The interest on a sum of Rs 2000 is being compounded annually at the rate of 4% p.a Find the period for which the compound interest is Rs 163.20.

Sol: $P = Rs\ 2000$, $R = 4\%$ p.a, $CI = Rs\ 163.20$, $T = ?$

$$A = P + CI$$
$$= 2000 + 163.20 = Rs\ 2163.20$$

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

$$\Rightarrow 2163.20 = 2000\left(1 + \frac{4}{100}\right)^n$$

$$\Rightarrow \frac{2163.20}{2000} = \left(\frac{26}{25}\right)^n$$

$$= 1.0816 = (1.04)^n$$

$$\Rightarrow (1.04)^2 = (1.04)^n$$

$$\Rightarrow n = 2$$

Q.8 In how much time would Rs 5000 amount to Rs 6655 at 10% p.a Compound Interest.

Sol: $P = Rs\ 5000$, $A = Rs\ 6655$, $R = 10\%$

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

$$\Rightarrow 6655 = 5000\left(1 + \frac{10}{100}\right)^n$$

docs.aglasem.com

aglasem.com

$$\Rightarrow \quad \frac{6655}{5000} = \left(1+\frac{1}{10}\right)^n$$

$$\Rightarrow \quad \frac{1331}{1000} = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow \quad \left(\frac{11}{10}\right)^3 = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow n = 3 \text{ years}.$$

Q9 In what time will Rs 4400 become Rs 4576 at 8% p.a interest compounded half yearly.

Sol: $P = 4400$, $A = Rs\ 4576$, $R = 8\%$ p.a

here, $A = P\left(1+\frac{R}{200}\right)^{2n}$

$$\Rightarrow 4576 = 4400\left(1+\frac{8}{200}\right)^{2n}$$

$$\Rightarrow \frac{4576}{4400} = \left(1+\frac{1}{25}\right)^{2n}$$

$$\Rightarrow \left(\frac{26}{25}\right)^1 = \left(\frac{26}{25}\right)^{2n}$$

$$\Rightarrow 2n = 1$$

$$\Rightarrow n = \frac{1}{2} \text{ year}.$$

docs.aglasem.com

aglasem.com

Q.10 The difference between S.I and C.I on a certain sum of money for 2 years at 4% p.a is Rs. 20. Find the sum.

Sol: $T = 2$ years, $R = 4\%$.

$$SI = \frac{P \times R \times T}{100} = \frac{P \times 4 \times 2}{100} = \frac{2P}{25}$$

Now $$CI = P\left[\left(1+\frac{R}{100}\right)^n - 1\right]$$

$$= P\left[\left(1+\frac{4}{100}\right)^2 - 1\right] = P\left[\left(\frac{26}{25}\right)^2 - 1\right]$$

$$= P\left(\frac{676}{625} - 1\right)$$

$$= P\left(\frac{676-625}{625}\right) = \frac{51}{625}P$$

Now, $CI - SI = 20$

$$\Rightarrow \frac{51P}{625} - \frac{2P}{25} = 20$$

$$\Rightarrow \frac{51P - 50P}{625} = 20$$

$$\Rightarrow P = 20 \times 625$$

$$= 12500$$

aglasem.com

Q.11 In what time will Rs 1000 amounts to Rs 1331 at 10% p.a, Compound Interest.

Sol: here, $P = Rs\ 1000$, $A = Rs\ 1331$, $R = 10\%$ p.a

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

$$\Rightarrow 1331 = 1000\left(1+\frac{10}{100}\right)^n$$

$$\Rightarrow \frac{1331}{1000} = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow \left(\frac{11}{10}\right)^3 = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow n = 3$$

Q.12 At what rate % Compound Interest per annum will Rs 640 amount to Rs 774.40 in 2 years?

Sol: here $P = Rs\ 640$, $A = Rs\ 774.40$, $n = 2$

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

$$\Rightarrow 774.40 = 640\left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \frac{774.40}{640} = \left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \frac{484}{400} = \left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \left(\frac{22}{20}\right)^2 = \left(1+\frac{R}{100}\right)^2$$

docs.aglasem.com

aglasem.com

$$\Rightarrow \quad 1+\frac{R}{100} = \frac{22}{20}$$

$$\Rightarrow \frac{R}{100} = \frac{22}{20} - 1$$

$$\Rightarrow \frac{R}{100} = \frac{22-20}{20} = \frac{1}{10}$$

$$\Rightarrow R = \frac{100}{10} = 10\%.$$

Q.13 Find the rate percent per annum if Rs. 2000 amount to Rs 2662 in $1\frac{1}{2}$ years, Interest being Compounded half yearly.

Sol: here, $P = Rs\ 2000$, $A = Rs\ 2662$, $T = 1\frac{1}{2} = \frac{3}{2}$ year.

$$\because \quad A = P\left(1+\frac{R}{200}\right)^{2n}$$

$$\Rightarrow \quad 2662 = 2000\left(1+\frac{R}{200}\right)^{2\times\frac{3}{2}}$$

$$\Rightarrow \frac{2662}{2000} = \left(1+\frac{R}{200}\right)^{3}$$

$$\Rightarrow \quad \frac{1331}{1000} = \left(1+\frac{R}{200}\right)^{3}$$

$$\Rightarrow \quad \left(\frac{11}{10}\right)^{3} = \left(1+\frac{R}{200}\right)^{3}$$

$$\Rightarrow \quad 1+\frac{R}{200} = \frac{11}{10}$$

$$\Rightarrow \quad \frac{R}{200} = \frac{11}{10} - 1 = \frac{11-10}{10} \Rightarrow R = \frac{200}{10} = 20\%$$

docs.aglasem.com

aglasem.com

Q.14 Kamala borrowed from Ratan a certain Sum at a certain rate for 2 years Simple Interest. She lent this sum at the same rate to Hari for two years Compound Interest. At the end of two years She received Rs 210 Compound Interest, but paid Rs 200 only as Simple Interest. Find the sum and the rate of Interest.

Sol: here. CI that Kamala receives = Rs 210

S.I that Kamala paid = Rs 200

$T = 2$ years

so, $SI = \frac{PRT}{100} = \frac{P \times 2 \times R}{100} = 200$

$\Rightarrow P \times R = 10000 \quad ---(1)$

$\because CI = A - P$

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

$\Rightarrow 210 = P\left[\left(1+\frac{R}{100}\right)^2 - 1\right]$

$\Rightarrow 210 = P\left[\left(1+\frac{R^2}{10000}+\frac{R}{50}-1\right)\right]$

$\Rightarrow 210 = \frac{PR^2}{10000} + \frac{PR}{50}$

$\Rightarrow 210 = \frac{10000R}{10000} + \frac{10000}{50}$ (By using (1))

docs.aglasem.com

aglasem.com

$\Rightarrow \quad 210 = R + 200$

$\Rightarrow \quad R = 210 - 200$

$= 10\%.$

In eqn (1), $PR = 10000$

$\Rightarrow \quad P = \frac{10000}{R} = \frac{10000}{10}$

$\Rightarrow P = Rs\ 1000$

Q.15 Find the rate percent per annum, if Rs 2000 amount to Rs 2315.25 in an year and a half, Interest being compounded six monthly.

Sol: Here, $P = Rs\ 2000$, $A = Rs\ 2315.25$, $T = 1\frac{1}{2} = \frac{3}{2}$ years.

when Compounded half yearly

$$A = P\left(1 + \frac{R}{200}\right)^{2n}$$

$$\Rightarrow 2315.25 = 2000\left(1 + \frac{R}{200}\right)^{2 \times \frac{3}{2}}$$

$$\Rightarrow \frac{2315.25}{2000} = \left(1 + \frac{R}{200}\right)^3$$

$$= \frac{231525}{200000} = \left(1 + \frac{R}{200}\right)^3$$

$$\Rightarrow \frac{9261}{8000} = \left(1 + \frac{R}{200}\right)^3 \quad \Rightarrow \left(\frac{21}{20}\right)^3 = \left(1 + \frac{R}{200}\right)^3$$

docs.aglasem.com

aglasem.com

$$\Rightarrow \quad \left(1+\frac{R}{200}\right) = \frac{21}{20}$$

$$\Rightarrow \frac{R}{200} = \frac{21}{20} - 1 = \frac{21-20}{20}$$

$$\Rightarrow \frac{R}{200} = \frac{1}{20}$$

$$\Rightarrow R = \frac{200}{20} = 10\%.$$

hence, $R = 10\%$.

Q.11 Find the rate at which a sum of money will double itself in 3 years, if the interest is compounded annually.

Sol: Let Principal = Rs P, Amount = Rs 2P, T = 3 yrs.

$$\therefore A = P\left(1+\frac{R}{100}\right)^3$$

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

$$\Rightarrow \quad 2 = \left(1+\frac{R}{100}\right)^3 \Rightarrow 1+\frac{R}{100} = 2^{1/3}$$

$$\Rightarrow 1+\frac{R}{100} = 1.2599$$

$$\Rightarrow \frac{R}{100} = 1.2599 - 1$$

$$\Rightarrow R = 0.2599 \times 100$$

$$= 25.99\%.$$

docs.aglasem.com

aglasem.com

Q.17 Find the rate at which a sum of money will become four times the orginal amount in 2 years, If the interest is compounded half yearly.

Sol: Let orginal amount = P

Amount = 4P

T = 2 years

When interest is compounded half yearly.

$$A = P\left(1+\frac{R}{200}\right)^{2n}$$

$$\Rightarrow 4P = P\left(1+\frac{R}{200}\right)^{2\times 2}$$

$$\Rightarrow \frac{4P}{P} = \left(1+\frac{R}{200}\right)^{4}$$

$$\Rightarrow 4 = \left(1+\frac{R}{200}\right)^{4}$$

$$\Rightarrow 1+\frac{R}{200} = 4^{1/4} = 1.4142$$

$$\Rightarrow \frac{R}{200} = 1.4142 - 1$$

$$\frac{R}{200} = 0.4142$$

$$\Rightarrow R = 200 \times 0.4142$$

$$= 82.84\%.$$

Q.18 A certain sum amounts to Rs 5832 in 2 years at 8% Compounded Interest Find the Sum.

docs.aglasem.com

aglasem.com

Sol: Let certain Sum = Rs P

Amount = Rs 5832

$n = 2$ years.

$R = 8\%$.

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

$$\Rightarrow 5832 = P\left(1+\frac{8}{100}\right)^2$$

$$\Rightarrow 5832 = P\left(\frac{27}{25}\right)^2$$

$$\Rightarrow 5832 = P \times \frac{729}{625} \Rightarrow P = \frac{5832 \times 625}{729}$$

$$= 8 \times 625 = \text{Rs } 5000$$

8.19 The difference between the compound interest and simple interest on a certain sum for 2 years at 7.5% p.a is Rs. 360. Find the sum.

Sol: Let certain Sum = Rs P

$n = 2$ years.

$R = 7.5\%$.

$$S.I = \frac{PRT}{100} = \frac{P \times 7.5 \times 2}{100} = \frac{15P}{100} = \frac{3P}{20}$$

$$C.I = P\left\{\left(1+\frac{R}{100}\right)^n - 1\right\} = P\left\{\left(1+\frac{7.5}{100}\right)^2 - 1\right\}$$

$$= P\left\{\frac{249}{1600}\right\}$$

docs.aglasem.com

aglasem.com

$\therefore$ CI − SI = 360

$\Rightarrow \frac{249}{1600}P - \frac{3P}{20} = 360$

$\Rightarrow \frac{249P - 240P}{1600} = 360$

$\Rightarrow 9P = 360 \times 1600$

$\Rightarrow P = \frac{360 \times 1600}{9}$

$= 40 \times 1600 = 64000$

$\therefore P =$ Rs 64000

Q.20 The difference in simple interest and compound interest on a certain sum of money at $6\frac{2}{3}$ % p.a for 3 years is Rs. 46. Find the sum.

Sol Let certain sum = Rs P

$R = 6\frac{2}{3}\% = \frac{20}{3}\%$, $n = 3$ years.

$$S.I = \frac{P \times R \times T}{100} = \frac{P \times \frac{20}{3} \times 3}{100} = \frac{1}{5}P$$

$$CI = P\left[\left(1+\frac{R}{100}\right)^n - 1\right]$$

$$= P\left[\left(1+\frac{20}{300}\right)^3 - 1\right] = P\left[\left(1+\frac{1}{15}\right)^3 - 1\right]$$

$$= P\left\{\left(\frac{16}{15}\right)^3 - 1\right\} = P\left(\frac{4096}{3375} - 1\right)$$

$$= P\left(\frac{4096 - 3375}{3375}\right) = \frac{721}{3375}P$$

aglasem.com

$\therefore \quad CI - SI = 46$

$\Rightarrow \frac{721}{3375}P - \frac{1}{5}P = 46$

$\Rightarrow \frac{721P - 675P}{3375} = 46 \quad \Rightarrow \frac{46}{3375}P = 46$

$\Rightarrow P = Rs\ 3375$

Q.21 Ishita invested a sum of Rs 12000 at 5% p.a compound Interest. She recived an amount of Rs 13230 after n years. Find the value of n.

Sol: $P = Rs\ 12000$, $R = 5\%\ p.a$, $A = Rs\ 13230$

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

$$\Rightarrow 13230 = 12000\left(1 + \frac{5}{100}\right)^n$$

$$\Rightarrow \frac{13230}{12000} = \left(\frac{21}{20}\right)^n$$

$$\Rightarrow \frac{441}{400} = \left(\frac{21}{20}\right)^n \Rightarrow \left(\frac{21}{20}\right)^2 = \left(\frac{21}{20}\right)^n$$

$$\Rightarrow n = 2$$

Q.22 At what rate percent per annum will a sum of Rs 4000 yield Compound Interest of Rs 410 in 2 years.

docs.aglasem.com

aglasem.com

Sol: $P = Rs\ 4000$, $C.I = Rs\ 410$, $n = 2$ years

$$A = P + CI$$
$$= 4000 + 410 = 4410$$

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

$$\Rightarrow \quad 4410 = 4000\left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \quad \frac{441}{400} = \left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \quad \left(\frac{21}{20}\right)^2 = \left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \quad 1+\frac{R}{100} = \frac{21}{20} \quad \Rightarrow \frac{R}{100} = \frac{21}{20} - 1$$

$$\Rightarrow \frac{R}{100} = \frac{1}{20}$$

$$\Rightarrow R = \frac{100}{20} = 5\%.$$

Q23 A sum of money deposited at 2% p.a Compound annualy becomes Rs 10404 at the end of 2 years. Find the sum deposited.

Sol: Let Sum = Rs P, $R = 2\%$ p.a, $A = 10404$, $T = 2$ yrs

$$10404 = P\left(1+\frac{2}{100}\right)^2$$

$$\Rightarrow 10404 = P\left(\frac{51}{50}\right)^2 \quad \Rightarrow \quad 10404 = P \times \frac{2601}{2500}$$

docs.aglasem.com

aglasem.com

$$\therefore P = \frac{10404 \times 2500}{2601}$$

$$= Rs\ 10,000$$

Q.24 In how much time will a sum of Rs 1600 amount to Rs 1852.50 at 5% p.a compound interest.

Sol: here $P = Rs\ 1000$, $A = Rs\ 1852.50$, $R = 5\%$ p.a

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

$$\Rightarrow 1852.50 = 1600\left(1 + \frac{5}{100}\right)^n$$

$$\Rightarrow \frac{1852.50}{1600} = \left(\frac{21}{20}\right)^n$$

$$\Rightarrow \frac{9261}{8000} = \left(\frac{21}{20}\right)^n \Rightarrow \left(\frac{21}{20}\right)^3 = \left(\frac{21}{20}\right)^n$$

$$\Rightarrow n = 3 \text{ yrs.}$$

Q.25 At what rate percent will a sum of Rs 1000 amount to Rs 1102.50 in 2 years at Compound interest.

Sol: $P = Rs\ 1000$, $A = 1102.50$, $n = 2$ yrs.

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

$$\Rightarrow 1102.50 = 1000\left(1 + \frac{R}{100}\right)^2$$

docs.aglasem.com

aglasem.com

$$\Rightarrow \frac{1102.50}{1000} = \left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \frac{4410}{4000} = \left(1+\frac{R}{100}\right)^2$$

$$\Rightarrow \left(\frac{21}{20}\right)^2 = \left(1+\frac{R}{100}\right)^2 \Rightarrow 1+\frac{R}{100} = \frac{21}{20}$$

$$\Rightarrow \frac{R}{100} = \frac{21-20}{20}$$

$$\Rightarrow R = \frac{100}{20} = 5\%$$

Q.26 The Compound interest on Rs 1800 at 10% P.a for a certain period of time is Rs 378. Find the time in years.

Sol: $P = Rs\ 1800$, $R = 10\%$ P.a, $C.I = Rs\ 378$.

$$A = P + CI$$
$$= 1800 + 378 = 2178$$

$$\rightarrow 2178 = 1800\left(1+\frac{10}{100}\right)^n$$

$$\Rightarrow \frac{2178}{1800} = \left(1+\frac{1}{10}\right)^n$$

$$\Rightarrow \frac{121}{100} = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow \left(\frac{11}{10}\right)^2 = \left(\frac{11}{10}\right)^n \Rightarrow n = 2\ yrs$$

docs.aglasem.com

aglasem.com

Q.27 : What sum of money will amount to Rs 455825 at $6\frac{3}{4}$ % p.a in two years, interest being compounded annually.

Sol: Amount = Rs 45582.25, $R = 6\frac{3}{4}\% = \frac{27}{4}\%$

$T = 2$ years

Let Principal = Rs P

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

$$\Rightarrow 45582.25 = P\left(1+\frac{27}{400}\right)^2$$

$$\Rightarrow 45582.25 = P\left(\frac{427}{400}\right)^2$$

$$\Rightarrow 45582.25 = P \times \frac{427}{400} \times \frac{427}{400}$$

$$\Rightarrow P = \frac{45582.25 \times 400 \times 400}{427 \times 427}$$

$$= 40000$$

$\therefore$ Required sum = Rs 40000

Q.28 Sum of money amounts to Rs 453690 in 2 years at 6.5% p.a compounded annually. Find the sum.

Sol: Let sum = Rs P

$A = 453690$

$T = 2$ yrs

$R = 6.5\%$

docs.aglasem.com

aglasem.com

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

$$\Rightarrow 453690 = P\left(1+\frac{6.5}{100}\right)^{2}$$

$$\Rightarrow 453690 = P\left(\frac{106.5}{100}\right)^{2}$$

$$\Rightarrow P = 453690 \times \frac{100}{106.5} \times \frac{100}{106.5}$$

$$= 400000$$

$\therefore P = Rs\ 400000.$

aglasem

docs.aglasem.com

aglasem.com