

Exercise 7.4 – Simple Interest

Grade VII Mathematics | Complete Solutions: Questions 1–12

Formula: $S.I. = (P \times R \times T)/100$ Amount = $P + S.I.$

1. Find the simple interest and amount

(i) $P = \text{₹}3500$, $R = 11\%$, $T = 2$ years

$S.I. = 3500 \times 11 \times 2/100 = \text{₹}770$

Amount = $3500 + 770 = \text{₹}4270$

(ii) $P = \text{₹}20,000$, $R = 8\frac{1}{2}\%$, $T = 4\frac{1}{2}$ years

$S.I. = 20000 \times 17/2 \times 9/2 \div 100 = \text{₹}7650$

Amount = $20,000 + 7650 = \text{₹}27,650$

(iii) $P = \text{₹}6480$, $R = 16\frac{2}{3}\%$, $T = 8$ months = $2/3$ year

$S.I. = 6480 \times 50/3 \times 2/3 \div 100 = \text{₹}720$

Amount = $6480 + 720 = \text{₹}7200$

2. Find the time

(i) $T = 200 \times 100/(2500 \times 4) = 2$ years

(ii) $T = 2730 \times 100/(12000 \times 6.5) = 3\frac{1}{2}$ years

3. Find the rate

(i) $R = 585 \times 100/(1560 \times 3) = 12\frac{1}{2}\%$ p.a.

(ii) $R = 325 \times 100/(1625 \times 2.5) = 8\%$ p.a.

4. Find the principal

(i) $P = 3840 \times 100/(16 \times 2.5) = \text{₹}9600$

(ii) $T = 2$ years 4 months = $7/3$ years.

$P = 2730 \times 100/(7.5 \times 7/3) = \text{₹}15,600$

5. Find the rate

(i) $S.I. = 13200 - 12000 = \text{₹}1200$.

$R = 1200 \times 100/(12000 \times 2) = 5\%$ p.a.

(ii) $S.I. = 4000 - 3000 = \text{₹}1000$.

$R = 1000 \times 100/(3000 \times 2) = 16\frac{2}{3}\%$ p.a.

6. Find the time

(i) $S.I. = 1950 - 1250 = \text{₹}700$.

$T = 700 \times 100/(1250 \times 16) = 3\frac{1}{2}$ years

(ii) $S.I. = 8447.50 - 6540 = \text{₹}1907.50$.

$T = 1907.50 \times 100/(6540 \times 12.5) = 2\frac{1}{4}$ years = 2 years 4 months

7. Find the time

$S.I. = 16,240 - 14,000 = \text{₹}2240$.

$T = 2240 \times 100/(14000 \times 4) = 4$ years

8. Find the rate

Amount = $3P$, so $S.I. = 2P$.

$2P = (P \times R \times 6)/100$.

Therefore $R = 200/6 = 33\frac{1}{3}\%$ p.a.

9. Find the principal

(i) At 20% for 5 years, S.I. = P. Hence $4500 = 2P$, so **P = ₹2250**.

(ii) At 4% for $2\frac{1}{2}$ years, S.I. = $0.1P$. Hence $2420 = 1.1P$, so **P = ₹2200**.

10. Find the rate

S.I. for 3 years = $3P/10$.

$(P \times R \times 3)/100 = 3P/10$.

Therefore **R = 10% p.a.**

11. Find the sum

$2760 = P(1 + 5 \times 3/100) = 1.15P$.

Therefore **P = $2760/1.15 = ₹2400$** .

12. Find the new amount

Original S.I. = $6900 - 6000 = ₹900$.

Original rate = $900 \times 100/(6000 \times 3) = 5\%$.

New rate = $5\% + 2\% = 7\%$.

New S.I. = $6000 \times 7 \times 3/100 = ₹1260$.

New amount = $6000 + 1260 = ₹7260$.

Final Answers

Q.	Answer
1(i)	S.I. ₹770; Amount ₹4270
1(ii)	S.I. ₹7650; Amount ₹27,650
1(iii)	S.I. ₹720; Amount ₹7200
2(i)	2 years
2(ii)	$3\frac{1}{2}$ years
3(i)	$12\frac{1}{2}\%$
3(ii)	8%
4(i)	₹9600
4(ii)	₹15,600
5(i)	5%
5(ii)	16%
6(i)	$3\frac{1}{2}$ years
6(ii)	2 years 4 months
7	4 years
8	33%
9(i)	₹2250
9(ii)	₹2200
10	10%
11	₹2400
12	₹7260