Simple and Compound Interest

Pinky invested an amount of Rs. 24500 at the rate of 9% per annum. After how many years will she get a simple interest of Rs. 37485 ?

A) 13 years
B) 15 years
C) 17 years
D) 19 years
E) None of these

$P = 24500$

$R = 9\%$

$T = ?$

$SI = 37485$

$$T = \frac{SI \times 100}{P \times R} = \frac{37485 \times 100}{24500 \times 9} = 17$$

Anoop borrowed Rs. 800 at 6 % p.a. & Rs. 1200 at 7 % p.a. for the same duration. He had to pay Rs. 1584 in all as interest. Find the time period.

a) 10 years
b) 11 years
c) 12 years
d) 13 years
e) 15 years

800 @ 6% → 48

1200 @ 7% → 84

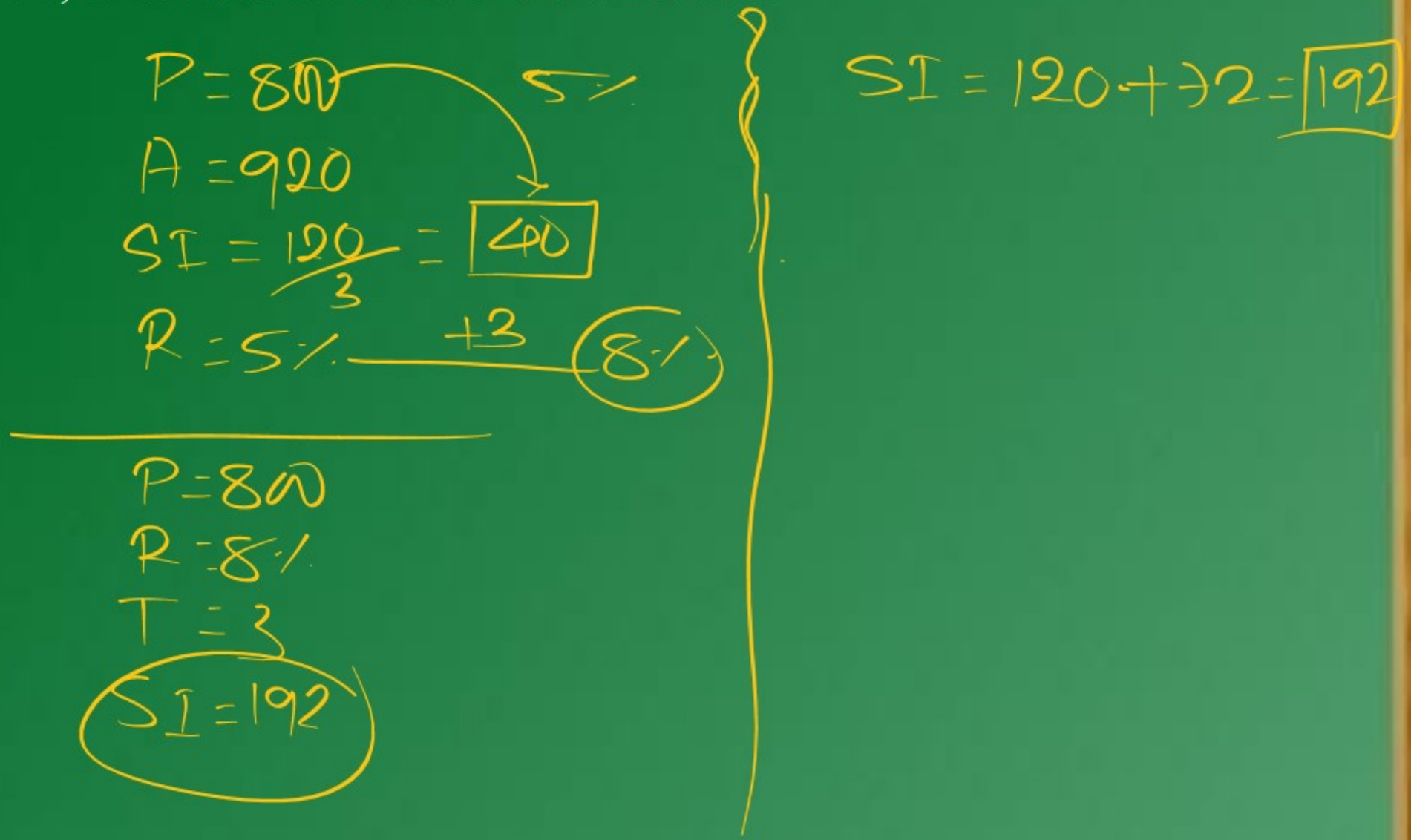
48 + 84 = 132

132 × 12 = 1584

T = 12 years

A sum of Rs, 800 amounts to Rs. 920 in 3 years at simple interest. If the interest rate is increased by 3%, it would amount to how much?

A) ~~Rs.652~~
B) ~~Rs.752~~
C) Rs.992
D) ~~Rs. 562~~



A sum of Rs.1550 was lent partly at 5% and partly at 8% p.a. simple interest. The total interest recieved after 3 years was Rs. 300. The ratio of the money lent at 5% to that lent at 8% is :

A) 5 : 8

B) 8 : 5

C) 16 : 15

D) 31 : 6

E) None

$\frac{100}{1550} \times 100 = \frac{200}{31}$

$x + y = 1550$

$\frac{1}{20}x + \frac{2}{25}y = 100$

1550

$R_1 = 5\%$ $T = 3$ $SI = 15\%$ $P = x$

$R_2 = 8\%$ $T = 3$ $SI = 24\%$ $P = 1550 - x$

$(15\% \text{ of } x) + (1550 - x) \times 24\% = 300$

$-\frac{9x}{100} + 372 = 300$

$\frac{9x}{100} = 72$

$x = 800$

$\frac{5 \times 31}{31}$ $\frac{8 \times 31}{31}$

$\frac{200}{31}$

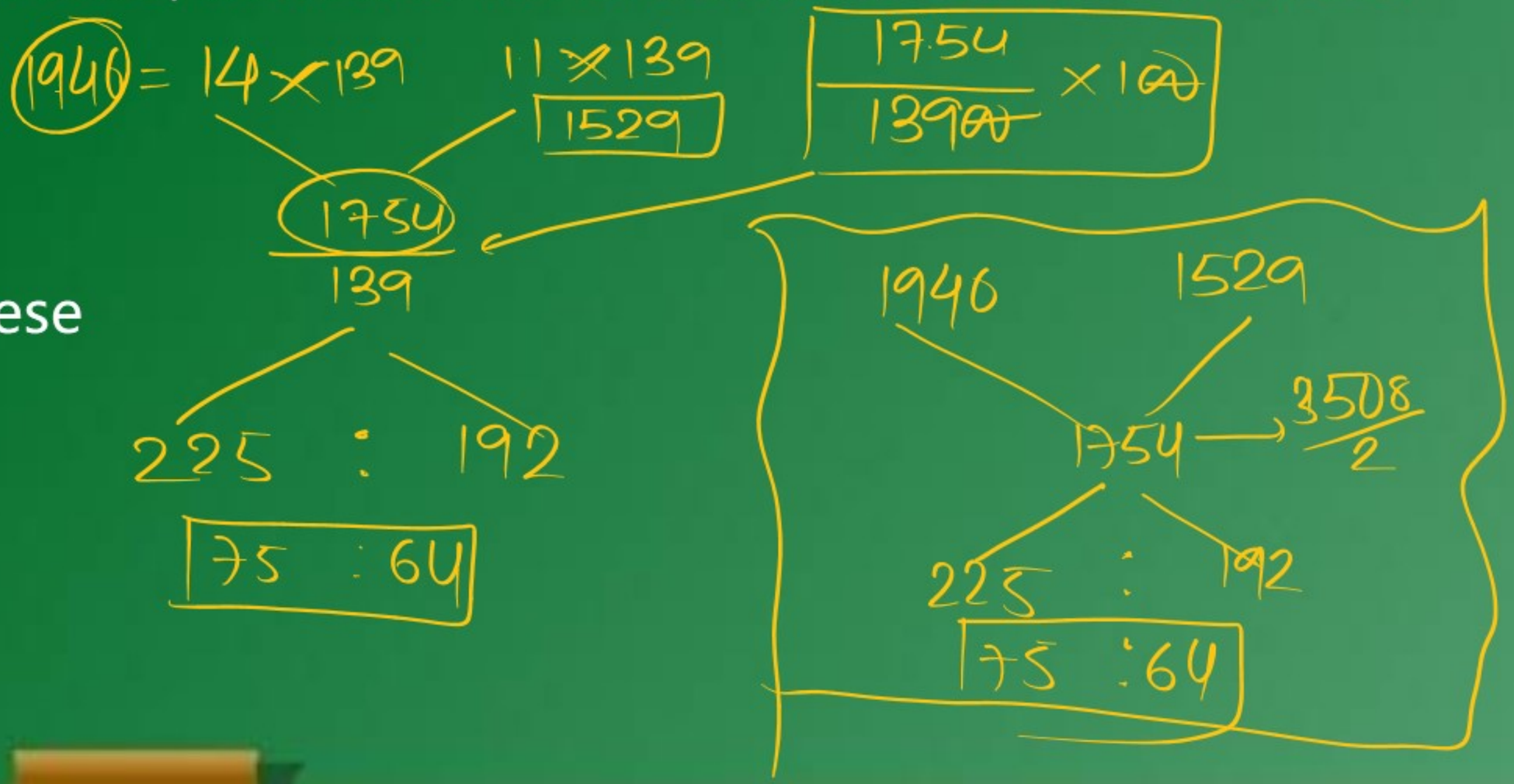
48 : 45

16 : 15

$\frac{I}{II} = \frac{800}{750} = \frac{16}{15}$

Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B?

A. Rs. 6400
B. Rs. 6500
C. Rs. 7200
D. Rs. 7500
E. None of these



An automobile financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 20%, the effective rate of interest becomes:

A.42 %
B.44 %
C.21 %
D.40 %
E. None

$P = 100$

$R = 20\% \xrightarrow{\frac{1}{2}} 10\%$

$T = 2$

$I^{st} = 10$

$II^{nd} = 10 + 1 = 21\%$

Aman and Raghav are two friends. Aman started a business with an investment of Rs 7200, while Raghav puts 60% of his salary at 40% p.a simple interest for 6 months; Raghav takes the amount received after 6 months and joins Aman in the business. If Aman receives a profit of Rs. 2000 out of a total profit of Rs. 2900 at the end of 1 year, what was the original salary of Raghav?

A. Rs. 18000
B. Rs. 9400
C. Rs. 9000
D. Rs. 15000
E. None of these

$$\frac{A}{R} = \frac{7200 \times 12}{72x \times 6} = \frac{2000}{900}$$

$x = 90$

$A + R = 2900$

$A = 2000 \quad R = 900$

Raghav $= 100x \xrightarrow{90} 9000$ — Ans

$P = 60x$

$T = 6 \text{ months} = \frac{6}{12} = \frac{1}{2}$

$R = 40\%$

$ST = 12x$

$A = 72x$

Out of Rs. 60,000 that Rahul has, he lends Rs. 10,000 at 11/2 % per annum simple interest and Rs. 32,000 at 6% per annum simple interest. He lends the remaining money at a certain rate of interest so that he gets total annual interest of Rs. 4000. The rate of interest per annum, at which the remaining money is lent, is?

a. 5%
b. 7.5%
c. 8%
d. 8.5%
e. 10%

$(10000 \times 5.5\%) + (32000 \times 6\%) + (18000 \times x\%) = 4000$

$550 + 1920 + 180x = 4000$

$180x = 1530$

$x = \frac{153}{18} = 8.5\%$

Compound Interest

Albert invested an amount of Rs. 8000 in a fixed deposit scheme for 2 years at compound interest rate 5 p.c.p.a. How much amount will Albert get on maturity of the fixed deposit?

A.Rs. 8600
B.Rs. 8620
C.Rs. 8820
D.Rs. 820
E.None of these

$P = 8000$

$R = 5\%$

$T = 2$

$CI = 2 : 1$

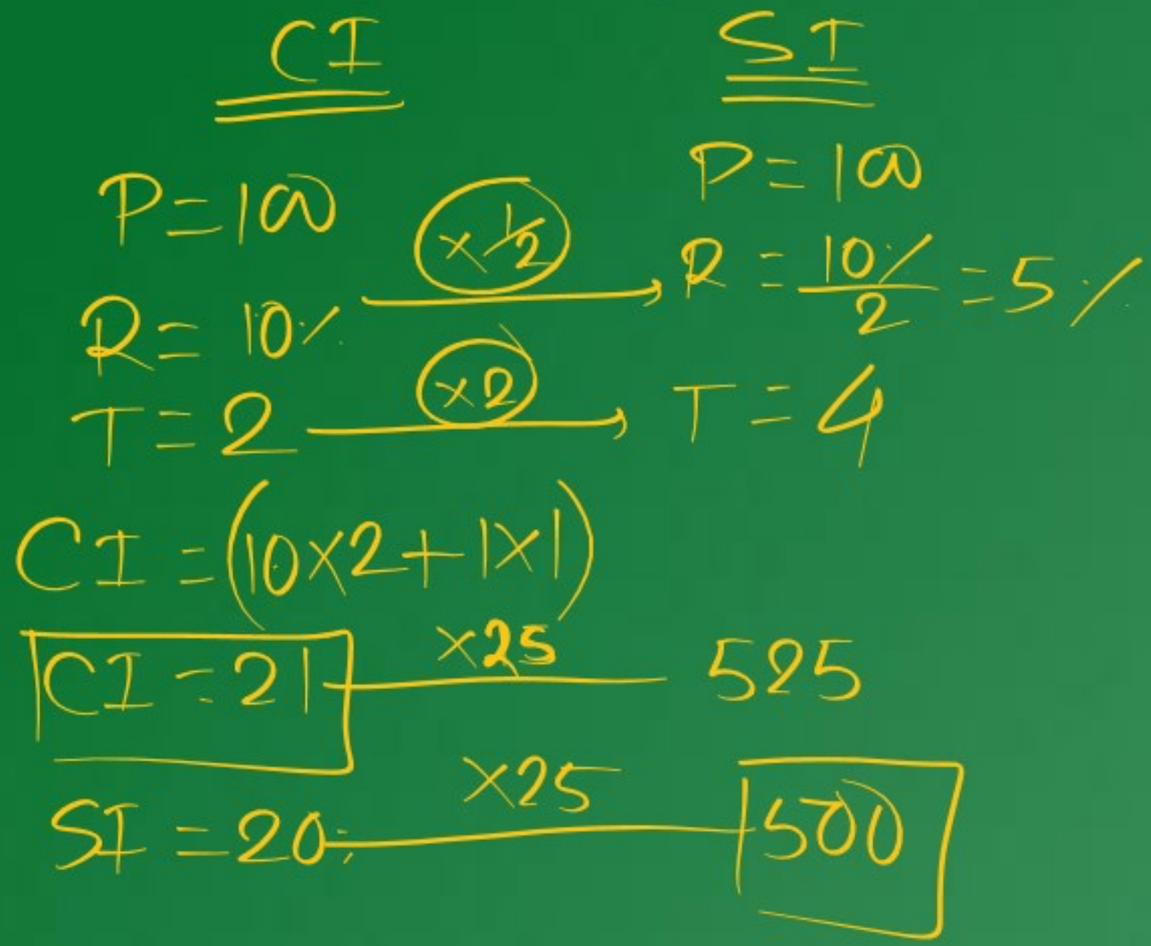
$= (400 \times 2) + (20 \times 1) = 820$

5%

$A = 8820$

The compound interest on a certain sum for 2 years at 10% per annum is Rs. 525. The simple interest on the same sum for double the time at half the rate percent per annum is:

A.Rs. 400
B.Rs. 500
C.Rs. 600
D.Rs. 800
E.Rs. 850



Simple interest on a certain sum of money for 3 years at 8% per annum is half the compound interest on Rs. 4000 for 2 years at 10% per annum. The sum placed on simple interest is:

A.Rs. 1550
B.Rs. 1650
C.Rs. 1750
D.Rs. 2000

SI

P = 1007

T = 3

R = 8%

$SI = \frac{840}{2} = 420$

CI

P = 4000

T = 2

R = 10%

$CI = (10 \times 2) + (1 \times 1) = 21\%$ of 4000 = 840

6

247 — ×70 — 420

1007 — ×70 — 1750

25

A sum of money doubles itself at compound interest in 5 years. In how many years will it become eight times?

a) 20 Years
b) 15 Years
c) 25 Years
d) 30 Years
e) 18 Years

$P = 100$

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

$$200 = 100\left(1 + \frac{R}{100}\right)^5$$

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

$$8 = 2^3 = \left(1 + \frac{R}{100}\right)^{5 \times 3} = \boxed{15 \text{ years}}$$

Akash borrowed Rs. 72,000 from a bank to purchase one bike. If the rate of interest be 10% per annum compounded annually, what payment he will have to make after 2 years 4 months?

a) 85000
b) 86350
c) 90024
d) 92258
e) 94250

2 : 1

$R = \frac{10}{3} = 3.33$

$\frac{R}{3}$ %

$10\frac{1}{3}$ %

$P = 72000$

$R = 10\%$

$T = 2$ years 4 months

Amount (Months)

$72000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{31}{30}$

$= 24 \times 11 \times 11 \times 31 = 90024$

for 2 years

$(10 \times 2) + (1 \times 1) = 21\%$

$21\% \text{ of } 72000 = 15120$

4 Month

$R = \frac{10}{3}\%$ $T = 4 \times 3 = 12$ Mon $= 1$ yr

$\frac{10}{3} \times 87120 = 2904$

$A = 72000 + 15120 + 2904 = 90024$

- Pankaj borrowed a total amount of Rs.32500 from his three friends Raj, Akash and Suresh. All of his friends apply different rates of interest in such a way that Raj applies 12%, Akash applies 16% and Suresh applies 18% interest rate respectively and total he gives Rs.5090 as interest. If the amount that Pankaj had taken from Raj is 18/25 of the amount taken from Suresh, then find that what amount Pankaj has taken from Akash?

a) 12000
b) 15000
c) 23000
d) 10000
e) 11000