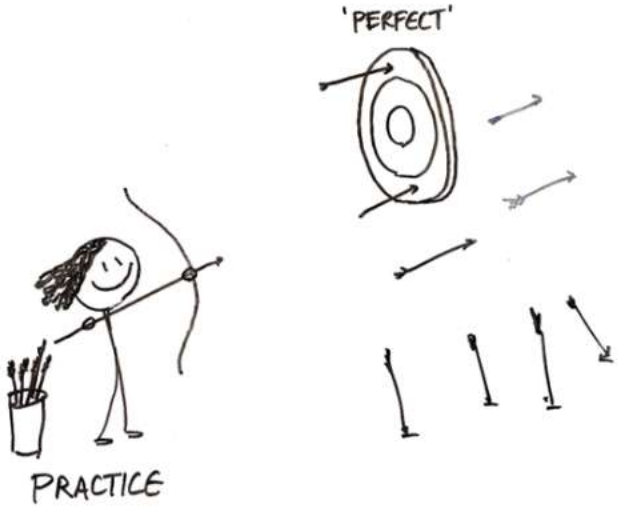
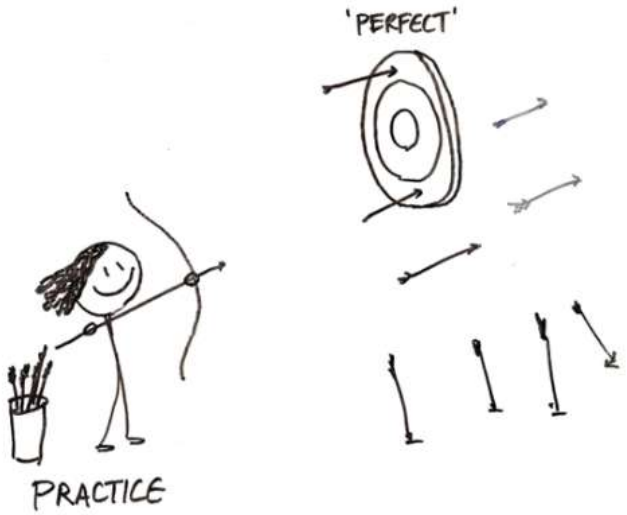
- Practice:
  1. Find the compound interest on Rs. 10,000 in 2 years at 4% per annum, the interest being compounded half-yearly.
  2. Find compound interest on Rs. 7500 at 4% per annum for 2 years, compounded annually.
  3. In what time will Rs. 1000 become Rs. 1331 at 10% per annum compounded annually?
  4. What will be the compound interest on a sum of Rs.25,000 after 3 years at the rate of 12 p.c.p.a?
  5. A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?



- Practice:
  6. How much Simple Interest can a person get on Rs. 8,200 at 17.5% p.a. for a period of 2 years and 6 months?
  7. If the principal amount to be 10000 invested in a bank for 3 years with a rate of interest of 10%.What will be the difference of SI & CI?
  8. If the principal amount to be 20000 invested in a bank for 3 years with a rate of interest of 20%.What will be the difference of SI & CI?
  9. The compound interest on Rs. 30,000 at 7% per annum is Rs. 4347. The period (in years) is:



Problems 18/06/2025

① $P = 100,000$

$R = 4\%$

Compounded half-yearly

$T = 4\%/2 = 2\%$

Time : 2 years, no of half years

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

$A = 10000\left(1 + \frac{2}{100}\right)^4 = 10000$

$(1.02)^4$

$1.02^4 \approx 1.082432$

$A \approx 10000 \times 1.082432 = 10824.32$

$CI = A - P = 10824.32 - 10000 = 824.32$

② $P = 7500$

$R = 4\%$

$T = 2$:

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

$A = 7500\left(1 + \frac{4}{100}\right)^T = 7500(1.04)^2$

$1.04^2 = 1.0816$

$A = 7500 \times 1.0816 = 8112$

$CI = A - P = 8112 - 7500 = 612$

(3) $P = 1000$

$A = 1331$

$R = 10\%$

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

$1331 = 10000\left(1 + \frac{10}{100}\right)^n$

$1.331 = (1.1)^n$

$1.13 = 1.331$ $\boxed{n = 3}$

Sunday 24

Week 39

(4) $P = 25,000$

$R = 12\%$

$T = 3$ yrs

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

$A = 25000\left(1 + \frac{12}{100}\right)^3 = 25000$

$(1.12)3$

$1.123 \approx 1.404$

$A \approx 25000 \times 1.404928 = 35123.20$

$CI = A - P = 35123.20 - 25000$

$= 10123.20$ //

5] $P = 12,500$

$A = 15,500$

$T = 4$ yrs

$SI = A - P = 15500 - 12500$

$SI = \frac{P \times R \times T}{100}$ $\quad 3000 = \frac{12500 \times R \times 4}{100}$

$3000 = 500 \times R$

$R = \frac{3000}{500} = 6\%$

6) $P = 8200$ $\quad R = 17.5\%$ $\quad T = 2.5$ yrs

$SI = \frac{P \times R \times T}{100}$ $\quad SI = \frac{8200 \times 17.5 \times 2.5}{100}$

$SI = \frac{8200 \times 43.75}{100} = \frac{358750}{100} = 3587.50$

7] $P = 10,000$ $\quad R = 10\%$ $\quad T = 3$ years

$SI = \frac{P \times R \times T}{100} = \frac{10000 \times 10 \times 3}{100} = 30000$

(CI) $\quad A = P\left(1 + \frac{R}{100}\right)^3 = 10000(1.1)^3$

$= 10000 \times 1.331 = 13310$

$CI = A - P = 13310 - 10000 = 3310$

CI - SI = 3310 - 3000 = 310

8] P = 20,000

R = 20%

T = 3

$SI = \frac{P \times R \times T}{100} = \frac{20000 \times 20 \times 3}{100} = 12000$

(CI)

$A = P\left(1 + \frac{R}{100}\right)^n = 20000(1.2)^3$

$= 20000 \times 1.728 = 34560$

CI = A - P = 34560 - 20000 = 14560

CI - SI = 14500 - 12000 = 2560

9] P = 30,000

R = 7%

CI = 4,347

A = P + CI = 30000 + 4347

= 34347

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

$34347 = 30000(1.07)^n$

$1.1449 = (1.07)^n$

$1.07^2 = 1.1449$

$\boxed{n = 2}$