(DAY-1)

TIME VALUE OF MONEY - VISUAL DERIVATION

(*) FORWARD COMPOUNDING CHAIN:-
[₹100 -> x 1.10 -> [₹110] -> 1.10 -> [₹121]
-> x 1.10 -> [₹133.1] -> x 1.10 -> [₹146.41]

(i) VALUE GROWING EACH YEAR AT 10%.

(*) DISCOUNTING
[146.41] -> ÷ 1.10 -> [₹133.1] - ÷ 1.10 -> [₹121] -> ÷ 1.10 -> [₹110] => ÷ 1.10 -> [₹100]

(ii) DISCOUNTING: PULLING THE FUTURE VALUE BACK TO PRESENT USING $(1+r)^n$.

=> x $(1+r)$ (OR) ÷ $(1+r)$, WHERE r = 10% per year.

PV is the amount today that grows to a future value after n years (TIME REDUCES VALUE UNLESS COMPENSATED WITH RETURN).

FORMULA: $PV = FV/(1+r)^n$
FV = 146.41
r = 10%
n = 4, PV = ₹100