ARITMÉTICA

SEMANA # 12: INTERÉS - DESCUENTO

01

- $I = ? = x$
- $C = 2500$
- r: 6% SEMESTRAL (6 MESES) $\times 2$ = 12%
- t: 4 MESES

$$x = \frac{(2500)(4)(12)}{1200}$$

$x = 100$

02

- r: x% ANUAL
- c: $x = 10$
- t: $\frac{x}{10}$ AÑOS
- I: 1
- $M = ? = 10 + 1 = 11$ R.

$$\therefore 1 = \frac{(x)\left(\frac{x}{10}\right)(x)}{100}$$

$$1 = \frac{x^3}{1000}$$

$1000 = x^3 \Rightarrow 10 = x$

03

$\therefore I = ?$

$\therefore C = 5200$

$\therefore r$: 7% CUATRIMESTRAL $\times 3$ = 21% ANUAL.

$\therefore t$: 7 AÑOS 5 Meses

7 (12 meses) + 5 Meses

89 Meses

$$x = \frac{(5200)(89)(21)}{1200}$$

$x = (13)(89)(7)$

$x = 8099$ R.

04

$\therefore C = ? = x$

$\therefore I = 180$

$\therefore t = 8$ MESES

$\therefore r$: 2% CUATRIMESTRAL $\times 3$ = 6% ANUAL.

$$\therefore 180 = \frac{(x)(8)(6)}{1200}$$

1500 = x

05

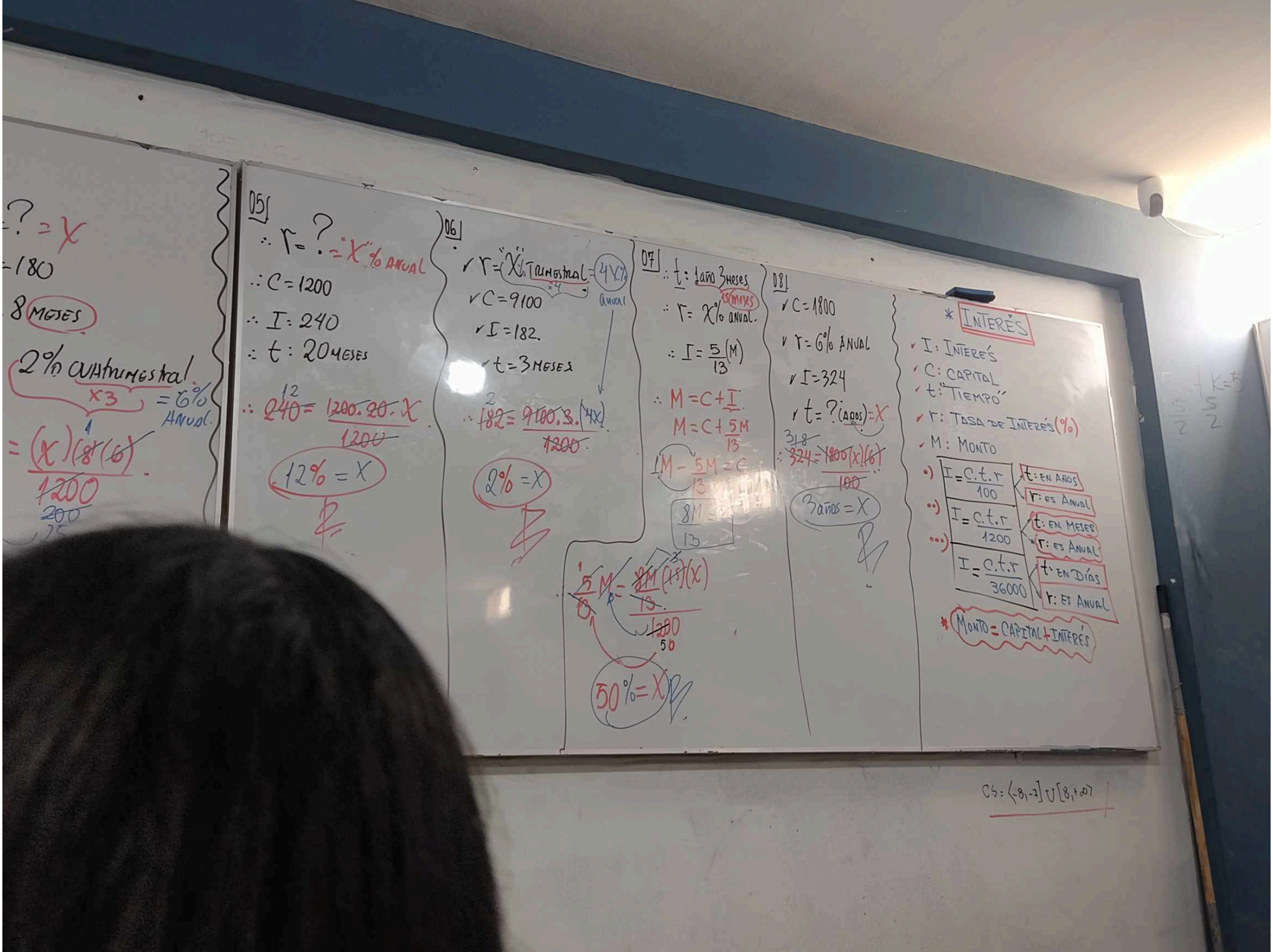
$\therefore r = ?$

$\therefore C = 1200$

$\therefore I = 24$

$\therefore t = 2$

$\therefore 240 = \frac{12}{}$


05
∴ r = ? = X % ANUAL
∴ C = 1200
∴ I = 240
∴ t : 20 MESES
12
240 = 1200.20.X / 1200
12% = X
06
r = X% TRIMESTRAL = 4X% ANUAL
C = 9100
I = 182.
t = 3 MESES
2
182 = 9100.3.(4X) / 1200
2% = X
07
∴ t : 1 AÑO 3 MESES (15 MESES)
∴ r = X% ANUAL.
∴ I = 5/13 (M)
∴ M = C + I
M = C + 5M/13
M - 5M/13 = C
8M/13
1/5 M = 8M/13 (15)(X) / 1200
50% = X
08
C = 1800
r = 6% ANUAL
I = 324
t = ? (AÑOS) = X
318
324 = 1800(X)(6) / 100
3 años = X
* INTERÉS
I: INTERÉS
C: CAPITAL
t: "TIEMPO"
r: TASA DE INTERÉS (%)
M: MONTO
I = C.t.r / 100 — t: EN AÑOS, r: ES ANUAL
I = C.t.r / 1200 — t: EN MESES, r: ES ANUAL
I = C.t.r / 36000 — t: EN DÍAS, r: ES ANUAL
* MONTO = CAPITAL + INTERÉS
CS: ⟨-8, -7] ∪ [8, +∞⟩

SEMANA # 12: INTERÉS - DESCUENTO

DESCUENTO

I "DESCUENTO" COMERCIAL (D_C)

(A) $$D_C = \frac{(V_N)(t)(r)}{100}$$

(B) $$D_C = \frac{(V_A)(t)(r)}{100 - (t)(r)}$$

$\therefore$ V_N = VALOR NOMINAL V_A = VALOR ACTUAL.

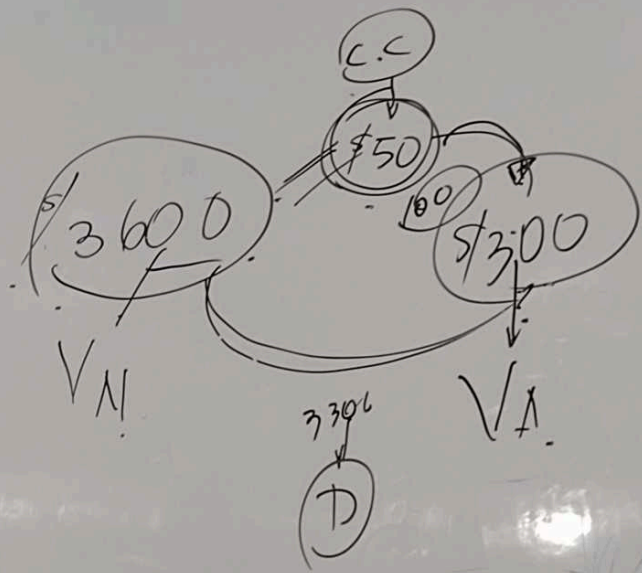
II "DESCUENTO RACIONAL" (D_R)

(C) $$D_R = \frac{(V_A)(t)(r)}{100}$$

(D) $$D_R = \frac{(V_N)(t)(r)}{100 + (t)(r)}$$

* LETRA DE CAMBIO ó PAGARE = VALOR NOMINAL

$\therefore$ $$V_N - V_A = D$$



SEMANA # 12: INTERÉS - DESCUENTO

DESCUENTO

I) DESCUENTO COMERCIAL (D_C)

(A) $D_C = \frac{(V_N)(t)(r)}{100}$ | (B) $D_C = \frac{(V_A)(t)(r)}{100-(t)(r)}$

$\therefore$ V_N = VALOR NOMINAL | V_A = VALOR ACTUAL.

II) DESCUENTO RACIONAL (D_R)

(C) $D_R = \frac{(V_A)(t)(r)}{100}$ | (D) $D_R = \frac{(V_N)(t)(r)}{100+(t)(r)}$

* LETRA DE CAMBIO o PAGARE = VALOR NOMINAL

$\therefore$ $V_N - V_A = D$

09) $D_C = ? = X$
$V_N = 2,000$
$r = 3\%$ CUATRIMESTRAL $\times 3 = 9\%$ ANUAL
$t = 5$ MESES

$\therefore X = \frac{(2000)(5)(9)}{1200}$

$X = 75$

10) $D_C = ?$
$V_N = 1500$
$r = 2\%$ bimestral $\times 2 = 4\%$ ANUAL
$t = 7$ MESES

$X = \frac{(1500)(7)(4)}{1200}$

$X = 35$

11) $D_C = ?$
$V_N = 2400$
$r = 3\%$ ANUAL
$t = 5$ MESES

$X = \frac{(2400)(5)(3)}{1200}$

$X = 30$

12) D_R
$V_A =$
$r =$
$t =$

$X =$

$= ? = X$
2400
7% ANUAL.
3 meses

$X = \frac{(2400)(3)(7)}{1200}$

$X = 42$

13) $D_C = ? = Y$
$V_N = 200$
$r = 4\%$ SEME
$t = 3$ MESE

$\therefore X = \frac{(2000)(}{}$

$X = 40$

= ? = X

2400

7% ANUAL.

3 meses

$\frac{2400 \cdot (3)(7)}{1200}$

12

13]

✓ D_c = ? = X

✓ V_N = 2000

✓ r = 4% semestral = 8% anual (x2)

✓ t = 3 meses

$\therefore X = \frac{(2000)(3)(8)}{1200}$

$X = 40$

14]

✓ D_c = ?

✓ V_N = 3000

✓ r = 5% trimestral. (x4) 20% anual

✓ t = 7 meses

$\therefore X = \frac{(3000)(7)(20)}{1200}$

$\frac{3}{}$

$X = 350$

15] ✓ V_N = 12000

✓ D_c = ? $\Rightarrow D_c = \frac{12000 \cdot X \cdot 3}{36000}$

✓ t = X días

✓ r = 9% anual

$\frac{3}{}$

$D_c = 3X$

$\therefore$ AL FINAL = 11865

$V_A = 11865$

$* V_N - V_A = D$

$12000 - 11865 = 3X$

$135 = 3X$

$45 = X$

* INTERÉS (SIMPLE)

- I: INTERÉS
- C: CAPITAL
- t: "TIEMPO"
- r: TASA DE INTERÉS (%)
- M: MONTO

•) $I = \frac{C \cdot t \cdot r}{100}$ — t: EN AÑOS; r: ES ANUAL

••) $I = \frac{C \cdot t \cdot r}{1200}$ — t: EN MESES; r: ES ANUAL

•••) $I = \frac{C \cdot t \cdot r}{36000}$ — t: EN DÍAS; r: ES ANUAL

* MONTO = CAPITAL + INTERÉS

SEMANA # 12: INTERÉS - DESCUENTO

COMERCIAL (D_c)

$$D_c = \frac{(V_A)(t)(r)}{100-(t)(r)}$$

V_A = Valor Actual

RACIONAL (D_R)

$$D_R = \frac{(V_N)(t)(r)}{100+(t)(r)}$$

MONTO = Valor Nominal

16)

Caso I

$800 = \frac{(c)(t)(r)}{100}$

$80000 = ctr$

Caso II $-\frac{1}{3}$

$x = \frac{6c(5t)(\frac{7}{3}r)}{100}$

$x = \frac{21}{8}(ctr)$

$x = \frac{21}{8}(10000)$

$x = 21000$

17)

Caso I

$\therefore t$: 3 años

$\therefore C$: "2"

$\therefore M$: "3a" $\quad M = C + I \quad 3a = 2 + I \quad 22 = I$

$\therefore r$: ?

$\therefore I$: 22.

$22 = \frac{(2a)(3)(r)}{100}$

$\frac{200}{3}\% = r$

Caso II

$\therefore C$: 3000

$\therefore r = \frac{200}{3}\%$

$\therefore t$: 1 año 3 meses

$\therefore I$: ? = X

$X = \frac{(3000)(15)(\frac{200}{3})}{1200}$

$X = 2500$

18)

$J_1 = \frac{(\frac{c}{3})(6)(40)}{1200}$

15 meses

$I_2 = \frac{(\frac{2c}{3})(6)(50)}{1200}$

$I_1 + I_2 = 700$

$\frac{4c}{3} + \frac{10c}{3} = 700$

$\frac{14c}{3} = 700$

$14c = 700 \cdot 20$

$C = 3000$

19)

$I_1 = \frac{c}{4}(3)(20)$

$I_2 = \frac{3c}{4}(3)(30)$

$1320 = \frac{2c}{4} + \frac{9c}{4}$

$1320 = \frac{11c}{4}$

$1320 \cdot 40 = 11c$

$120 \cdot 160 = C$

$19200 = C$