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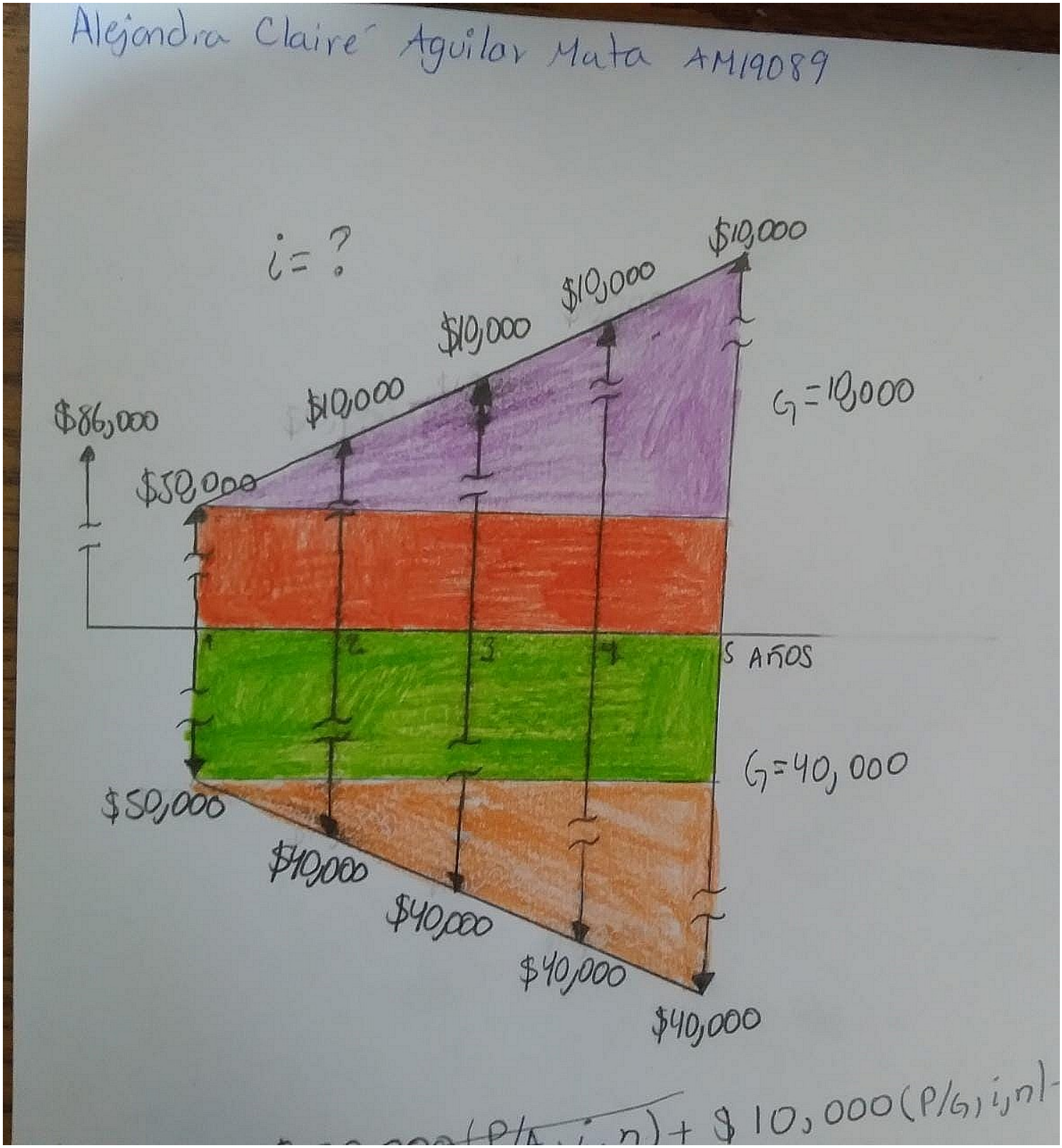

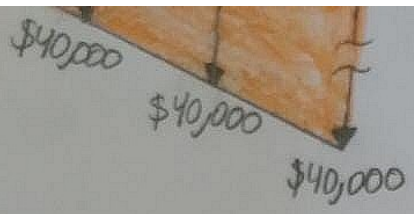


$\$85{,}000 = \cancel{\$50{,}000(P/A,i,n)} + \$10{,}000(P/G,i,n) - \cancel{\$50{,}000(P/A,i,n)}$
$+\$40{,}000(P/G,i,n)$

$\$85{,}000 = \$40K\,(P/G,i,5) - \$10K\,(P/G,i,5)$

$\$85{,}000 = \$30{,}000\,(P/G,i,5)$

$\frac{\$85{,}000}{\$30{,}000} = (P/G,i,5)$

$2.8333 = (P/G,i,5)$

| tasa | P/G |
|---|---|
| 35% | 3.1568 |
| $i$ | 2.8333 |
| 40% | 2.7637 |

interpolar

$$\frac{F - F_1}{F_2 - F_1} = \frac{X - X_1}{X_2 - X_1}$$

$$\frac{i - 0.35}{0.40 - 0.35} = \frac{2.8333 - 3.1568}{2.7637 - 3.1568}$$

$$\frac{i - 0.35}{0.05} = 0.8229$$

$i = 0.8229(0.05) + 0.35$

$i = 39.11\%$

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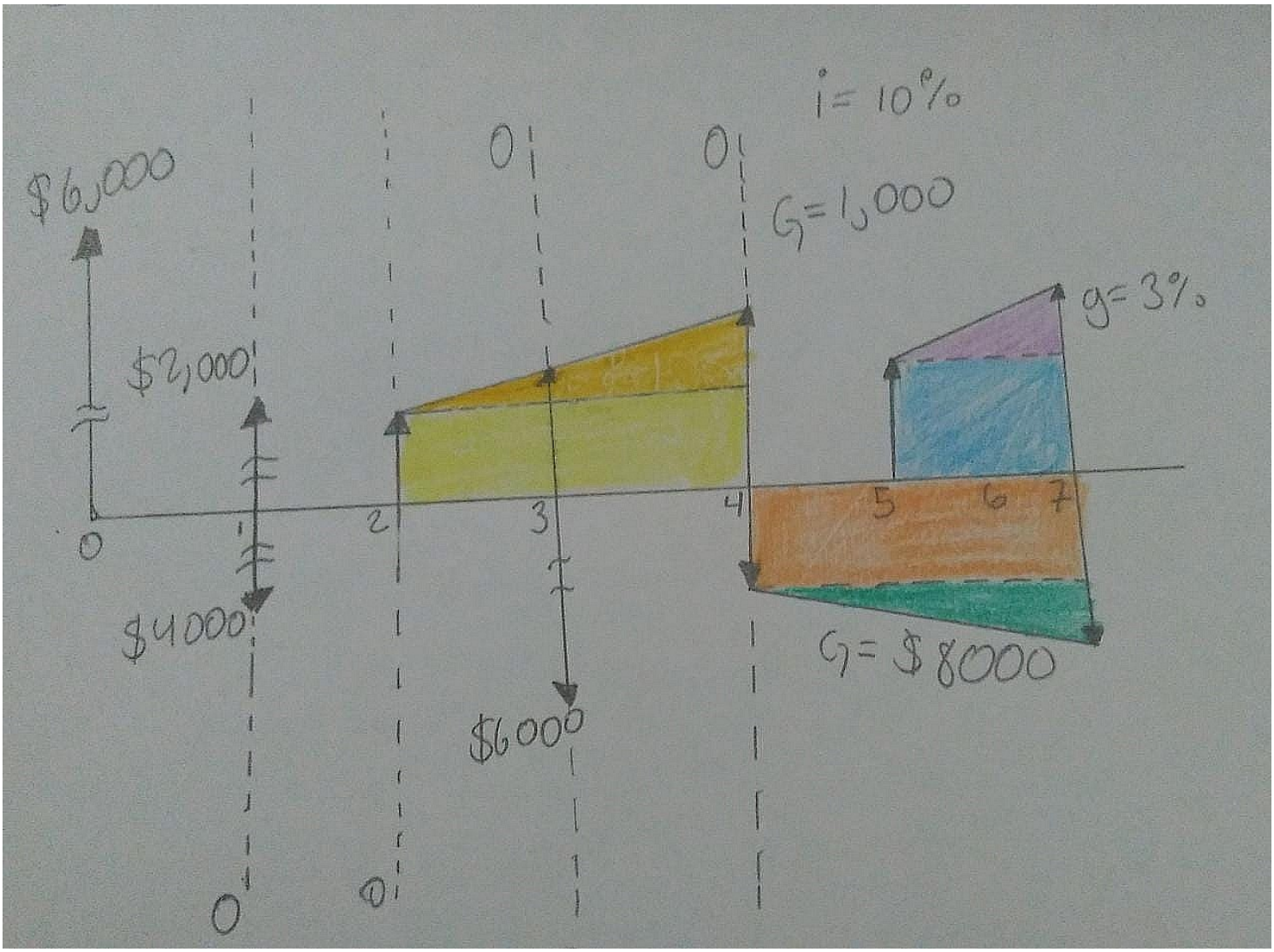
2-



②

Valor Presente Neto = ingresos - egresos

$VPN = VPi - VPE$

$VPi = 4000(P/F,10\%,1) + 600(P/F,10\%,3) + 4,000(P/A,10\%,4)(P/F,10\%,3) + 8000(P/G,10\%,3)(P/F,10\%,4)$

$VPI = 4,000(0.9091) + 6000(0.7513) + 4,000(3.1699)(0.7513) + 8000(2.3291)(0.6830)$

$VPI = 3,636.4 + 4507.8 + 9526.18 + 1,272.62$

$VPI = 18,943.00$

$VPE = 600 + 2,000(P/F,10\%,1) + 2000(P/A,10\%,3)(P/F,10\%,1) + 1000(P/G,10\%,2)(P/F,10\%,2) + 4000(2.5574004 57)(0.6830)$

$VPI = 18,943.00$

$VPE = 600 + 2,000(P/F,10\%,1) + 2000(P/A,10\%,3)(P/F,10\%,1) + 1000(P/G,10\%,2)(P/F,10\%,2) + 4000(2.5574004 57)(0.6830)$

$VPE = 60,000 + 2000(0.9091) + 2,000(2.4869)(0.9091) + 1000(0.8264)(0.8264) + 4000(2.5574004 57)(0.6830)$

$VPE = 7818.2 + 4521.68 + 682.94 + 6986.82$

$VPE = 20009.63$

$VPN = VPI - VPE$

$VPN = 18943 - 20009.64$

$VPN = \$-1066.64$

las operaciones propuestas generan pérdidas de $\$-1066.64$

Gradiente

$$1-\left(\frac{1+g}{1+i}\right)^n$$

$$\frac{1-\left(\frac{1+0.03}{1+0.1}\right)^3}{0.1-0.03}$$

$$\frac{1-\left(\frac{1.03}{1.1}\right)}{0.07}$$

$$\frac{1-0.820981968}{0.07}$$

$$= \frac{0.179018032}{0.07}$$

$$= 2.557400457$$

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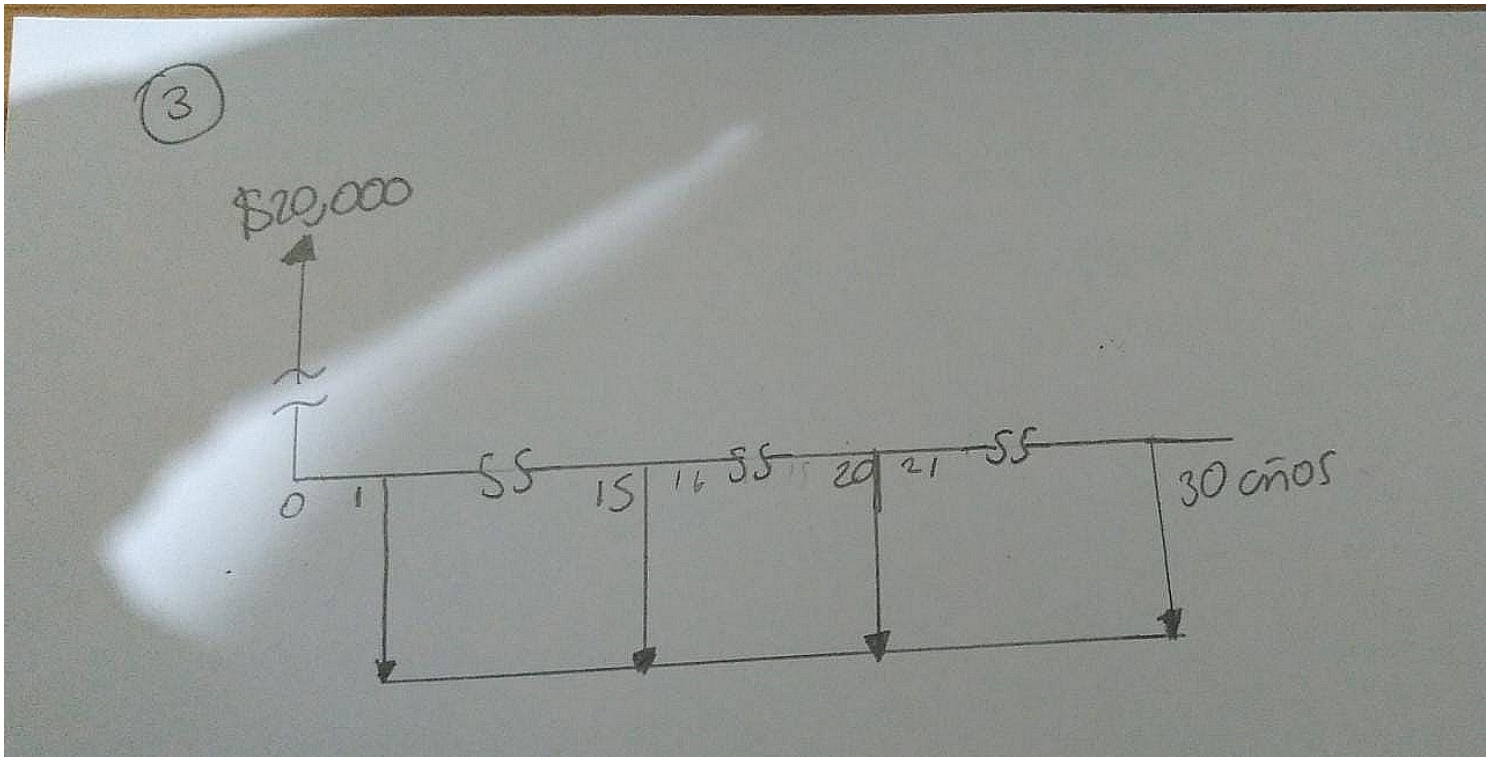

(3)

a)

$P = A(P/A, i, n)$

$\$20,000 = \$2,500(P/A, i, n)$

$$\frac{\$20,000}{\$2,500} = (P/A, i, n)$$

$8 = (P/A, i, 15)$

| tasa | P/A |
|---|---|
| 9% | 8.0607 |
| $i$ | 8 |
| 10% | 7.6061 |

$$\frac{i - 0.09}{0.10 - 0.09} = \frac{8 - 8.0607}{7.6061 - 8.0607}$$

$$\frac{i - 0.09}{0.01} = 0.1335$$

$i - 0.09 = 0.1335(0.01)$

$i = 0.1335(0.01) + 0.09$

$i = 0.0913 \simeq 9.13\%$

b)

$P = A(P/A, i, n)$

$\$20,000 = \$2,500\,(P/A, i, 20)$

$\frac{\$20,000}{\$2,500} = (P/A, i, 20)$

$8 = (P/A, i, 20)$

| tasa | P/A |
|---|---|
| 10% | 8.5136 |
| $i$ | 8 |
| 11% | 7.9633 |

$\frac{i = 0.10}{0.11 - 0.10} = \frac{8 - 8.5136}{7.9633 - 8.5136}$

$i - 0.10 = 0.9333(0.01)$

$i = 0.9333(0.01) + 0.10$

$i = 10.93\,\%$

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c)

$$\frac{\$20,000}{\$2,500} = (P/A, i, 30)$$

$$8 = (P/A, i, 30)$$

| tasa | P/A |
|---|---|
| 12% | 8.0552 |
| i | 8 |
| 13% | 7.4957 |

$$i - 0.12 = 0.0987(0.01)$$

$$i = 0.0987(0.01) + 0.12$$

$$i = 0.1210$$

$$i = 0.1210 \times 100$$

$$i = 12,10\%$$