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DOCENTE: ARQ. PEDRO ALBERTO GARCIA LOPEZ

MATERIA: RESISTENCIA DE MATERIALES DE CONSTRUCCION

ACTIVIDAD: EJERCICIOS

CUATRIMESTRE: 4° CUATRIMESTRE

**GRUPO: A**

LUGAR Y FECHA: 16/10/2022

Comitán de Domínguez Chiapas 2022

$$\triangle \qquad \overset{-12.06\,|_{m.}}{\curvearrowright}$$

0.85 ton   1.2 ton   1.8 ton

$\uparrow_1$ ↓   ↓   ↓

A

$+1.20 + 2.0m + 0.80m + 1.20$ ↑

$|— 5.20m —|$
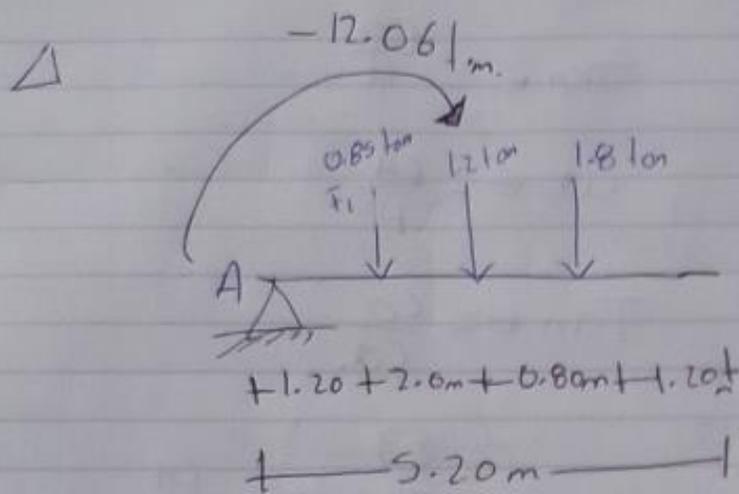
$Em_A = 1.02\ t\cdot m$

$_1M_A = (0.85\,ton)(1.20m) = 1.62\ t\cdot m$

$+3.84 + 7.20$

$_2M_A = (1.20\ ton)(3.20m) = 3.84\ ton\cdot m$

$= -12.06\ t\cdot m$

$_3M_A = (1.8\ ton)(4.00m) = 7.2\ ton\cdot m$

3.21 ton.   0.65 ton   1.02 ton

↓   ↓   ↓

A

$+0.5\,m + 1.20m + 0.60 + 1.20$
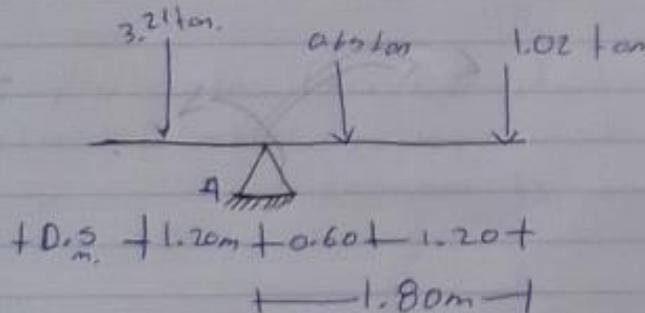
$|—1.80m—|$

$M_{1A} = (0.65\ ton)(0.60m) = -0.839\ t\cdot m$

$M_{2A} = (1.02\,ton)(1.80m) = -1.836\ t\cdot m$

$M_{3A} = (3.21\ ton)(1.20m) = 3.852\ t\cdot m$

$E_{mA} = -0.39\ t\cdot m + (-1.836) + 3.852\ t\cdot m = 1.62\ t\cdot m$

2.51 $\frac{t \cdot m}{}$ 0.26t→7
ton   0.98 ton

⊢0.8m⊣ ⊢1.35m⊣

$M_{1M} = (0.261_m)(0.8m) = -0.208 \ t \cdot m$
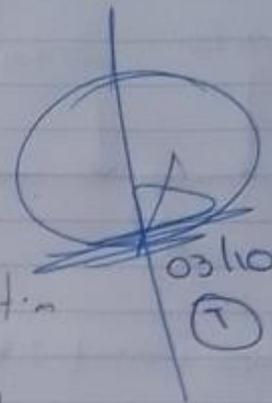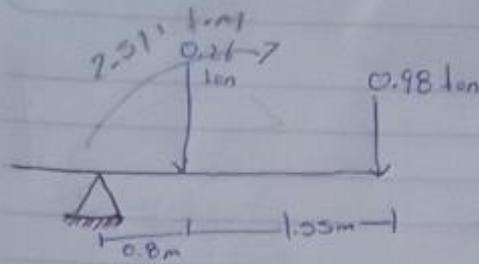
$M_{2A} = (0.98\,l_{on})(2.35m) = -2.303 \ t \cdot m$

$\mathcal{E} \, M_A = -0.208 \ t \cdot m \mid (-2.303 \ t \cdot m) = -2.511 \ t \cdot m$ ✓

4. 0→4 $l \cdot m$
  0.17 ton   0.7ton   1.25 ton

⊢0.6m⊢1.1m⊣⊢1.15m⊣
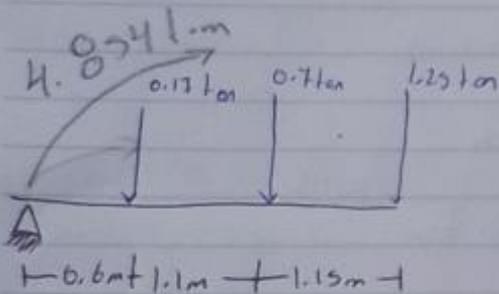
$M_{1a} = (6.17 \ ton)(0.6m) = -0.102 \ t \cdot m$

$M_{2A} = (0.7 ton)(1.7m) = -1.19 \ t \cdot m$

$M_{3A} = (1.25 \ ton)(2.85m) = -3.562 \ t \cdot m$

$\mathcal{E} M_A = -0.102t + (-1.19 \ t_m) \mid (-3.562 \ t \cdot m) = -4.854 \ t \cdot m$

1.7 ton   -4.14 $t \cdot m$
           1.1 ton   2.2 ton

⊢3.20m⊣⊢1.1m⊣ +0.5↗
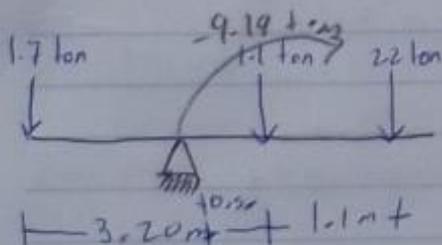
$\mathcal{E} M_A = 5.44 \ t \cdot m \ t$
$-4.07 \ t \cdot m \ t \ (-10.56 \ t \cdot m$

$= -9.19 \ t \cdot m$

$M_{1A} = (1.7 \ ton)(3.20m) = 5.44 \ t \cdot m$
$M_{2A} = (1.1 \ ton)(3.7 m) = -4.07 \ t \cdot m$
$M_{3A} = (2.2 \ ton)(4.8 m) = -10.56 \ t \cdot m$

03/10
Ⓣ
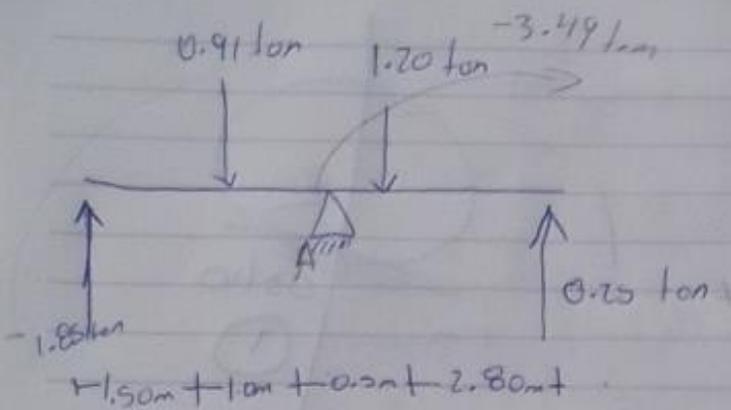
$$M_1 = (1.20 \text{ ton})(0.50 m) = -0.60 \text{ t·m}$$

$$M_2 = (0.25 \text{ ton})(3.30 m) = 0.825 \text{ t·m}$$

$$M_3 = (0.91 \text{ ton})(1.0 m) = 0.91 \text{ t·m}$$

$$m_4 = (1.85 \text{ ton})(2.50 m) = -4.625 \text{ t·m}$$

$$\Sigma m = (-0.60 \text{ t·m}) + (0.825 \text{ t·m}) + (0.91 \text{ ton·m}) + (-4.625 \text{ t·m}) = -3.49 \text{ t·m}$$

$$_A M_W = (15 N)(3.0 m) = -45 \, N·m$$

$$Sen\, 30° = \frac{co}{3.0 m}$$

$$A M_F = (90 N)(1.5 m)$$

$$co = (3.0 m)(sen\, 30°)$$
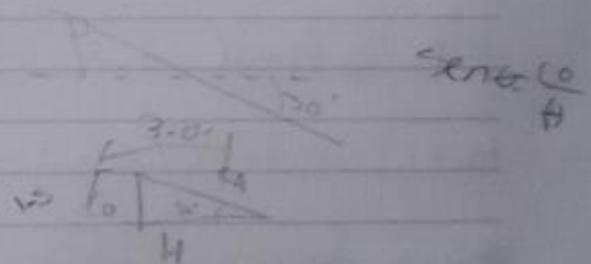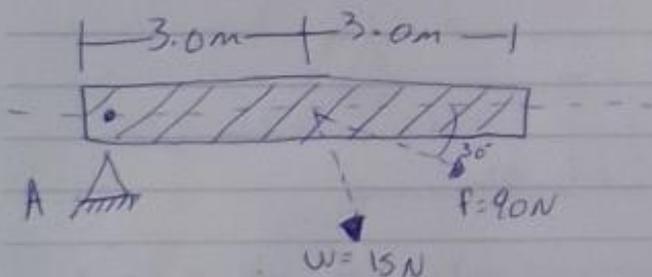
$$co = 1.50 m$$

$$M_F = -135 \, N·m$$

$$\Sigma m = -45 \, N·m + (-135 \, N·m) = -180 \, N·m$$

1.678 t·m.

$f_2 = 0.8$ ton.

0.25 ton

46°

25°

$f_1 = 0.35$ ton

0.60 ton.

1.20 ton

⊢ 0.6m + 1.20 m + 0.7m ⊣

90

Co

45°

H

1.20n

0.8 t·m

$Sen 46° = \dfrac{Co}{1.20m}$
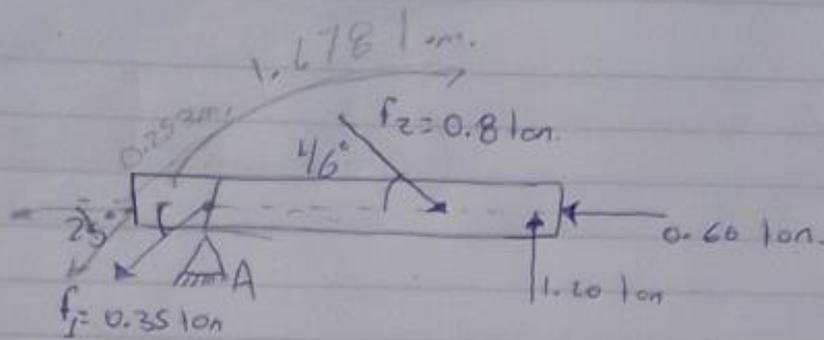
$= 0.863 m$

$Mf_3 = (1.20 \text{ ton})(1.90n) = 2.28 t·m$

$Mf_2 = (0.863 m)(0.80 \text{ ton}) = -0.6404 t·m$

$Mf_1 = (0.35 \text{ ton})(0.253 mm) = 0.0885 t·m$

$\Sigma m = 2.28 t·m + (-0.6404 t·m) + 0.0885 t·m$

$\Sigma m = 1.678 t·m.$

90°

f_2 Co

θ Ep

$Sen 25° = \dfrac{Co}{0.60m}$

$Co = 0.253m$
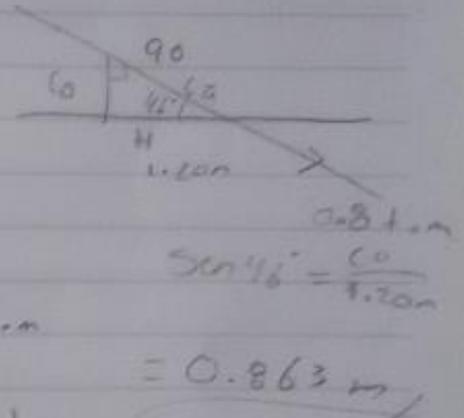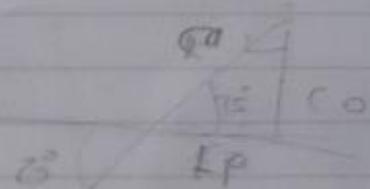
−0.864 t·m

$f_1 = 1.38$ ton

$f_2 = 1.25$ ton

⊢ 1.20m + 0.90 + 0.2 ⊣
m.
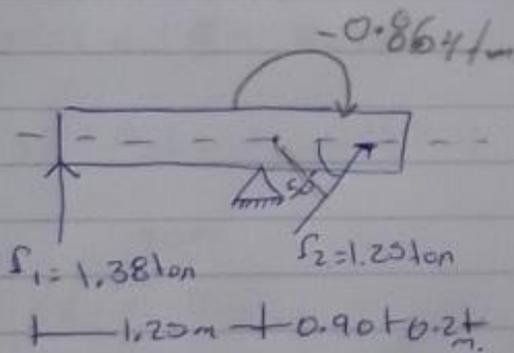
$Mf_1 = (1.38 \text{ ton})(1.20 m) = -1.725 \text{ ton·m}.$

$Mf_2 = (1.25 \text{ ton})(0.689 m) = 0.861 t·m.$

$\Sigma m = (-1.725 t·m) + (0.861 t·m) = -0.864 t·m$

H = 90

Co CA
0.684m.
$f_2 = 1.25$ ton

$Sen 30° = \dfrac{Co}{0.90}$

$Co = 0.684 m.$