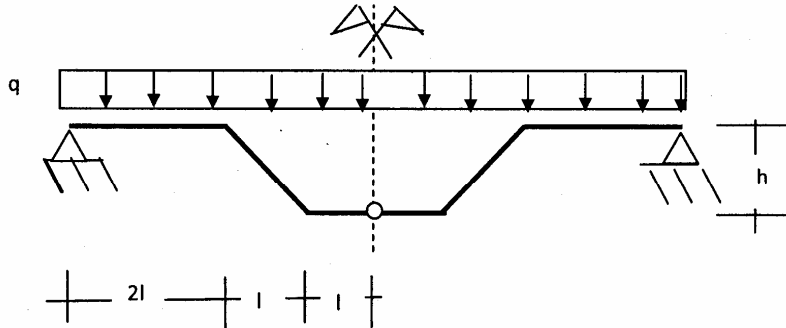
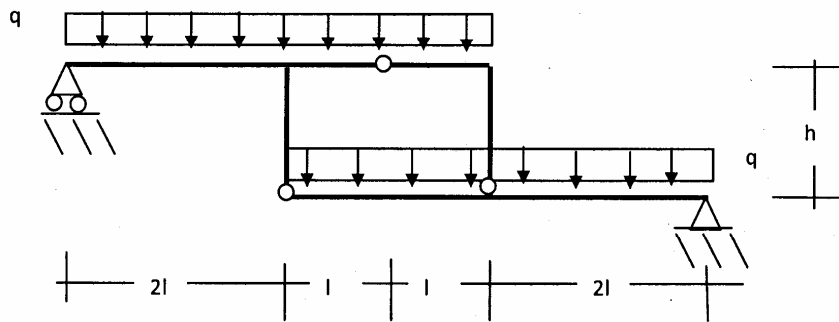


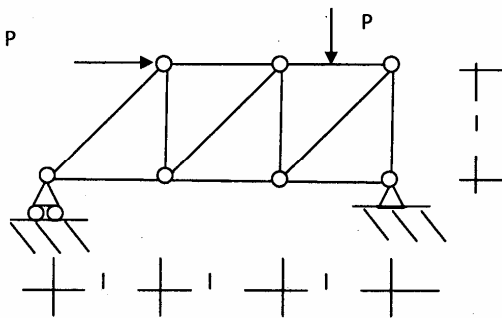
- 1) Determinare i diagrammi quotati delle azioni interne della struttura in figura dove  $l=2\text{m}$ ,  $h=3\text{m}$ ,  $q=500\text{daN/m}$

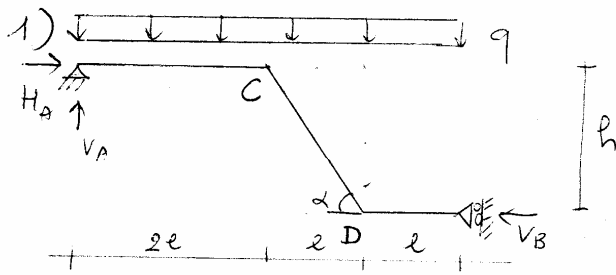


- 2) Determinare i diagrammi quotati delle azioni interne della struttura in figura dove  $l=2\text{m}$ ,  $h=3\text{m}$ ,  $q=1000\text{daN/m}$



- 3) Determinare gli sforzi primari e secondari della reticolare in figura con  $l=1.5\text{ m}$ ,  $P=100\text{ daN}$





$$l = 2\text{m}; h = 3\text{m}$$

$$q = 500 \text{ kg/m}$$

$$\tan \alpha = 3/2$$

$$\cos \alpha = 2/\sqrt{13}$$

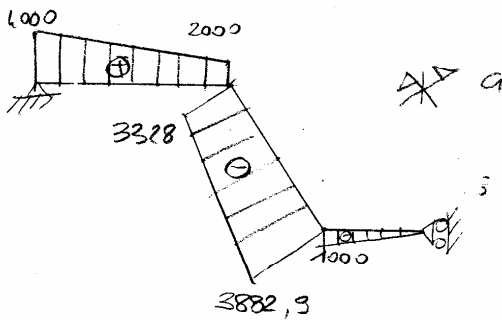
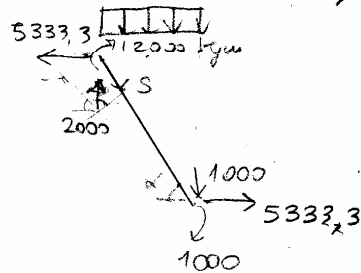
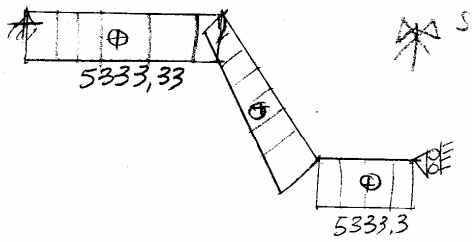
$$\sin \alpha = 3/2 = 3/\sqrt{13}$$

$$-V_B \cdot \frac{\sqrt{1+9/4}}{2} - 4q \cdot 2l = 0$$

$$V_B = -\frac{16}{3} q l = -5333,33$$

$$H_A = -\frac{16}{3} q l = -5333,33$$

$$V_A = 4q l = 4000 \text{ kg}$$



$$M_{CA} = 4000 \cdot 4 - q \cdot 2l \cdot l = 10000 \text{ kg m}$$

$$N(s) = +5333,33 \cos \alpha s + 2000 \sin \alpha s - q s \cos \alpha \cdot s$$

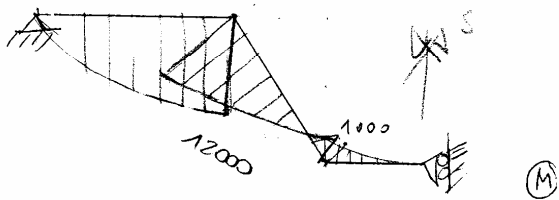
$$N_{CD} = 4622,5 \text{ kg}$$

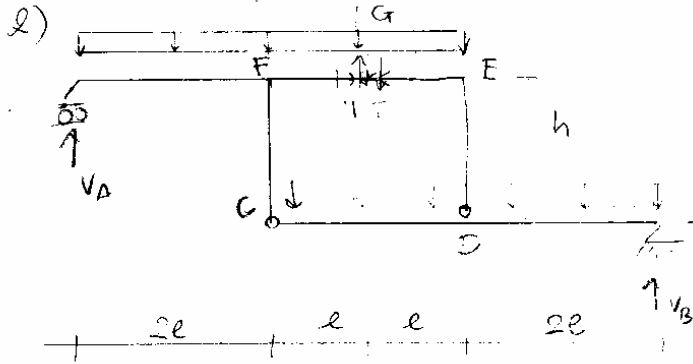
$$N_{DC} = 3790,5$$

$$T(s) = -5333,33 \sin \alpha s + 2000 \cos \alpha s - q s \sin^2 \alpha$$

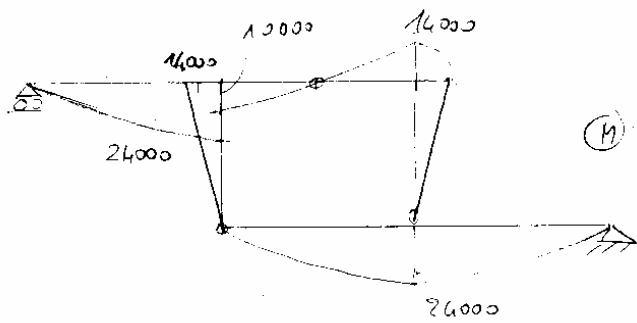
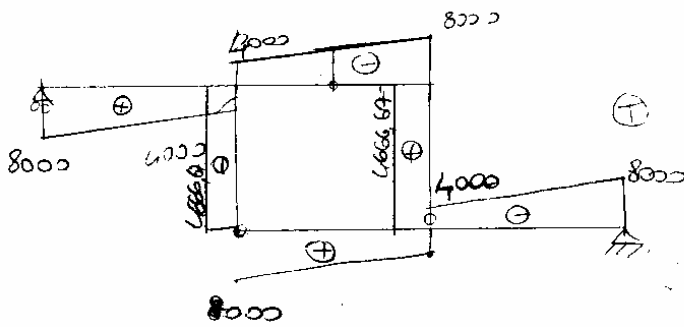
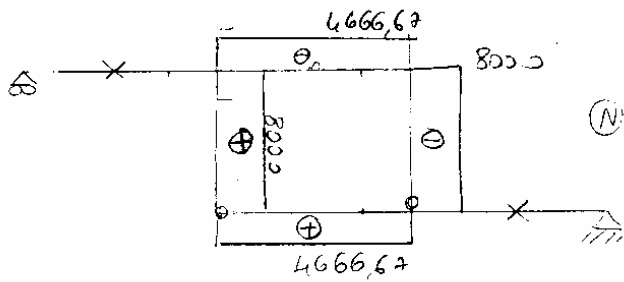
$$T_{CD} = -3328 \text{ kg}$$

$$T_{DC} = -3882,9 \text{ kg}$$



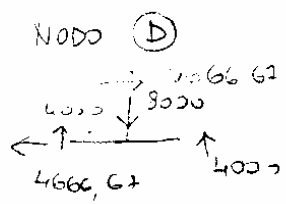


$l = 2m; h = 3m = \frac{3}{2}l$   
 $q = 1000 \text{ kg/m}$   
 $1) V_A + V_B = 89e$   
 $4e \cdot \frac{3}{2} = 6e$   
 $= 4 \cdot 2e \cdot \frac{3}{2} + 49e \cdot 2e$   
 $= 24qe^2$   
 $V_B = 49e \Rightarrow V_A = 49e$



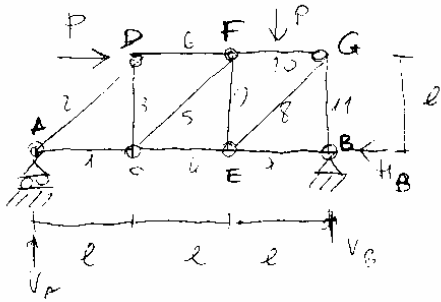
$11 \frac{3}{2}e + T + \frac{q \cdot 2e^2}{2} = 0$   
 $-11 \frac{3}{2}e - T + 49e^2 + 3 \cdot 2e \cdot (2e - \frac{3}{2}e) = 0$   
 $11 \frac{3}{2}e - T = 39e$   
 $-11 \frac{3}{2}e + T + 39e - 39e = 0$   
 $2T = -24e + 39e$   
 $T = 3e = 6000 \text{ kg}$   
 $N = \frac{2}{3}(-39e - \frac{q \cdot 2e^2}{2})$   
 $= -\frac{2}{3} \cdot 2e = -4666,67$   
 $V = 24e - 39e = -15e$   
 $= -15000$

$V_A = 8000 \text{ kg}$   
 $V_B = 3000 \text{ kg}$



$M_{DB} = 32000 - 8000 = 24000$   
 $M$

3)



$P = 100 \text{ kg}; l = 1,5$

$V_A + V_B = P$

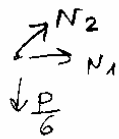
$H_B = P$

$V_B \cdot 3l = P \cdot \frac{5l}{2} + P \cdot l$

$V_B = \frac{7}{6}P$

$V_A = -\frac{1}{6}P$

(A)



$N_2 = \frac{P\sqrt{2}}{6}$

$N_1 = -\frac{P}{6}$

1 |  $-\frac{P}{6}$  | -16,67

2 |  $\frac{P}{6}\sqrt{2}$  | 23,57

3 |  $-\frac{P}{6}$  | -16,67

4 |  $-\frac{P}{3}$  | -33,33

5 |  $\frac{P}{6}\sqrt{2}$  | 23,57

6 |  $-\frac{5}{6}P$  | -83,33

7 |  $-P$  | -100

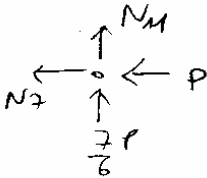
8 |  $\frac{2}{3}\sqrt{2}P$  | 94,28

9 |  $-\frac{2}{3}P$  | -66,67

10 |  $-\frac{2}{3}P$  | -66,67

11 |  $-\frac{7}{6}P$  | -116,7

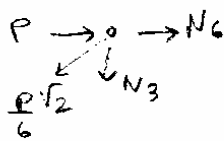
(B)



$N_7 = -P$

$N_{11} = -\frac{7}{6}P$

(C)

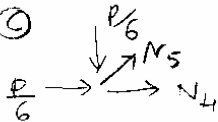


$N_6 = -P + \frac{P}{6}\sqrt{2}$

$= -\frac{5}{6}P$

$N_3 = -\frac{P}{6}$

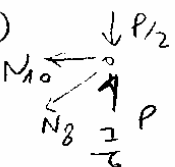
(D)



$N_5 = \frac{P\sqrt{2}}{6}$

$N_4 = -\frac{P}{6} - \frac{P}{6} = -\frac{P}{3}$

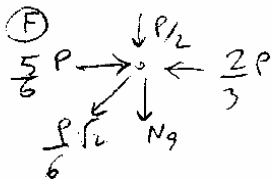
(E)



$N_8 = (\frac{7}{6} - \frac{1}{2})P\sqrt{2} = \frac{2\sqrt{2}P}{3}$

$N_{10} = -\frac{2}{3}P$

(F)



$N_9 = -\frac{P}{2} - \frac{P}{6} = -\frac{2}{3}P$

SECONDA RHO

