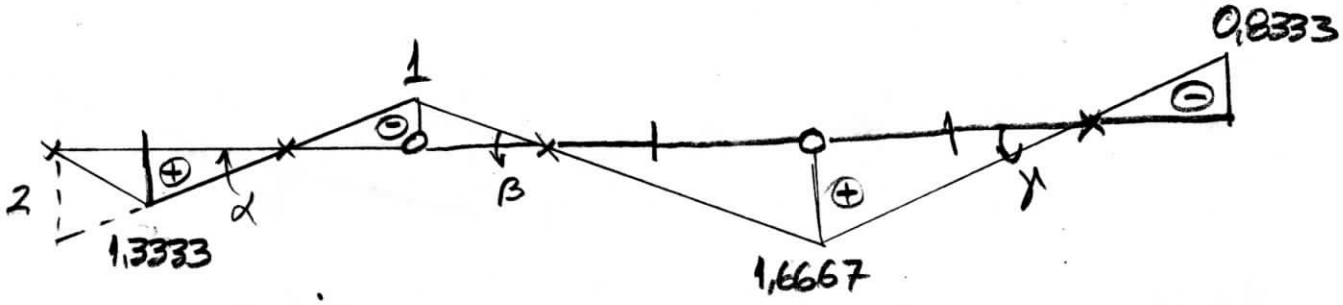
TE2-2.4

(-)

a) LI DE M_{S1}



$\alpha = 2/6 = 1/3$

$1/3 \times 4 = 4/3$

$1/3 \times 3 = 1$

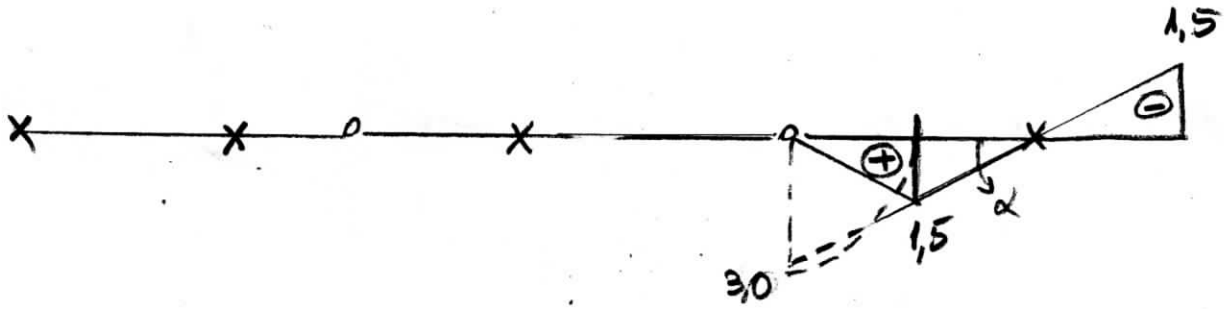
$\beta = 1/3$

$1/3 \times 5 = 5/3$

$\gamma = 5/6 = 5/18$

$5/18 \times 3 = 15/18$

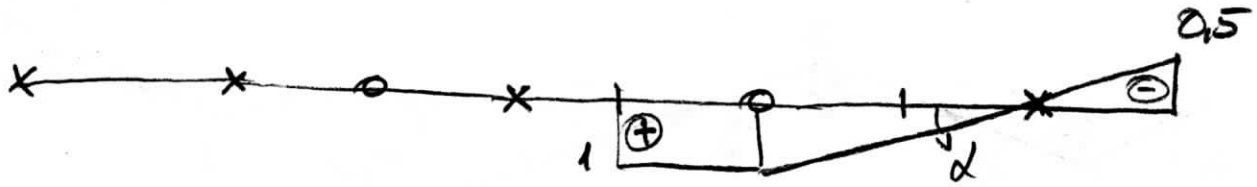
LI DE M_{S3}



$\alpha = 3/6 = 0,5$

$0,5 \times 3 = 1,5$

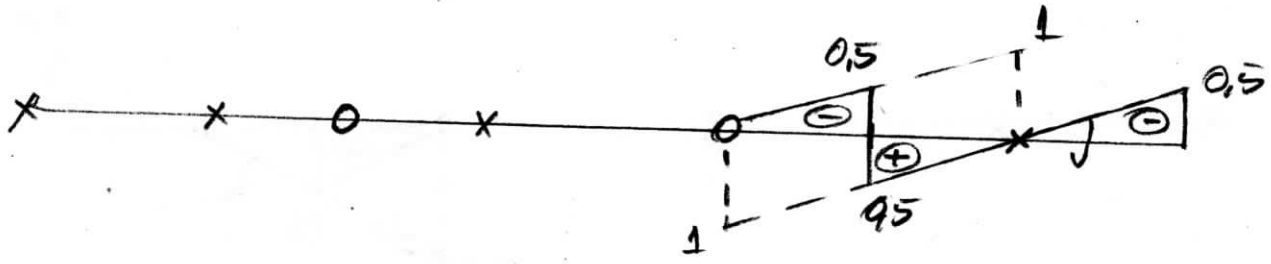
b) LI de Q_{S2}



$\alpha = 1/6$

$1/6 \times 3 = 0,5$

LI de Q_{S3}



$\alpha = 1/6$

c) $M\ominus_{máx\ s1}$:

$A_2 = (6m \times 1m)/2 = -3m^2$

$A_4 = (983333m \times 3m)/2 = -1,25m^2$

$y_1 = 0$

$M\ominus_{máx\ s1} = 60kN \times (-1m) + 40kN(0) +$
$20kN/m \times (-3 - 1,25)m^2 = \boxed{-145\ kNm}$

d) $M\oplus_{máx\ s3}$:

$A_1 = (6m \times 1,5m)/2 = 4,5\ m^2$

$M\oplus_{máx\ s3} = 60kN \times (+1,5m) + 40kN(0) +$
$20kN/m \times (+4,5m^2) = \boxed{+180\ kNm}$

e) $|Q_{máx\ s2}|$:

$A_1 = (+1 \times 3m) = 3m$

$A_2 = (+1 \times 6m)/2 = 3m$

$|Q_{máx\ s2}| = 60kN(+1) + 40kN(+1) +$
$20kN/m(3m + 3m) = \boxed{+220kN}$