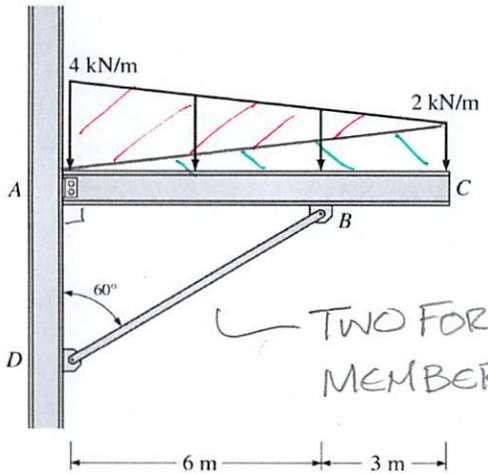
Example 2a-3: Find the reactions



TWO FORCE MEMBER

$\circlearrowleft + \sum M_A = 0 = -18kN(3m) - 9kN(6m) + B\sin 30°(6m)$

$\underline{\underline{B = 36kN}}$

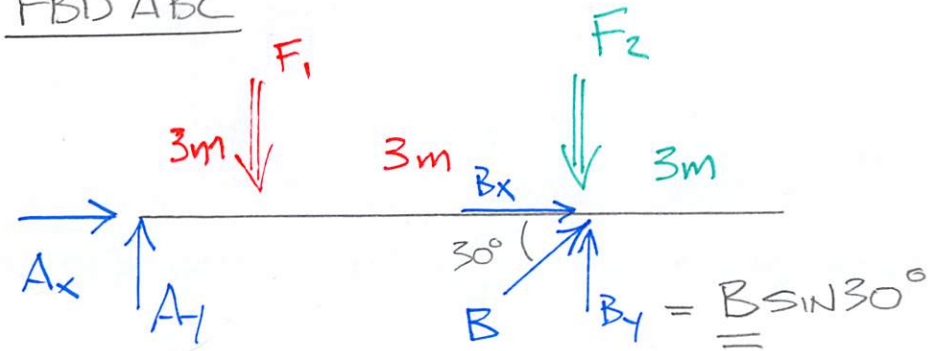
$+\uparrow \sum F_y = 0 = A_y + B\sin 30° - 18kN - 9kN$

$\underline{\underline{A_y = 9kN}}$

$\xrightarrow{+} \sum F_x = 0 = A_x + B\cos 30°$

$\underline{\underline{A_x = -31.17kN}}$

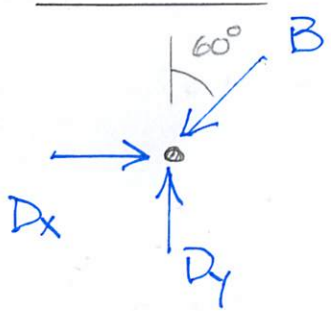
FBD ABC



$F_1 = \frac{1}{2}(9m)(4kN/m) = 18kN$

$F_2 = \frac{1}{2}(9m)(2kN/m) = 9kN$

JOINT D



$+\uparrow \sum F_y = 0 = D_y - B\cos 60°$

$\underline{\underline{D_y = 18kN}}$

$\xrightarrow{+} \sum F_x = 0 = D_x - B\sin 60°$

$\underline{\underline{D_x = 31.17kN}}$