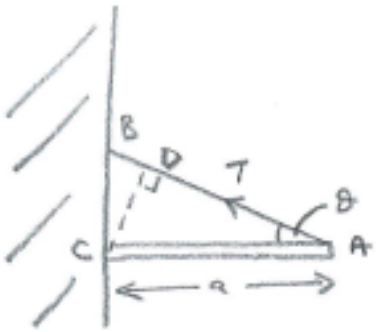
# Forces – Q4 [Practice/E](2/6/21)

Show that the moment of T about C is the same:

(i) if T is multiplied by CD

(ii) T is resolved into horizontal & vertical components at A

(iii) T is resolved into horizontal & vertical components at B



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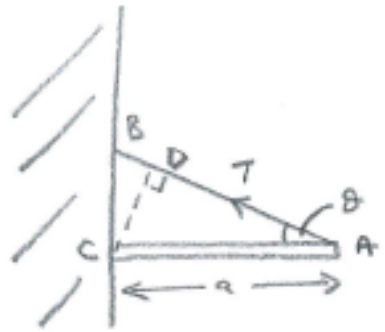
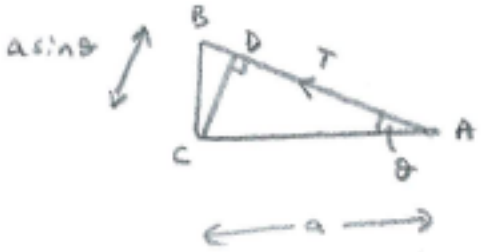


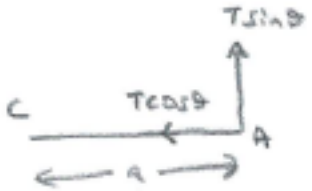

## Solution

(i)



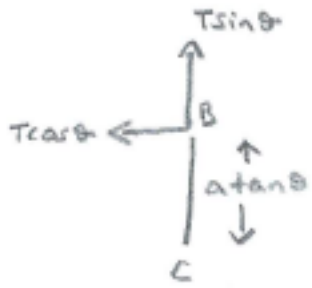

moment $= T \times CD = Tasin\theta$

(ii)




moment $= (Tcos\theta)(0) + (Tsin\theta)a = Tasin\theta$

(iii)




Referring to the original diagram, $CB = a\tan\theta$, so that

moment $= (T\cos\theta)(a\tan\theta) + (T\sin\theta)(0) = Ta\sin\theta$