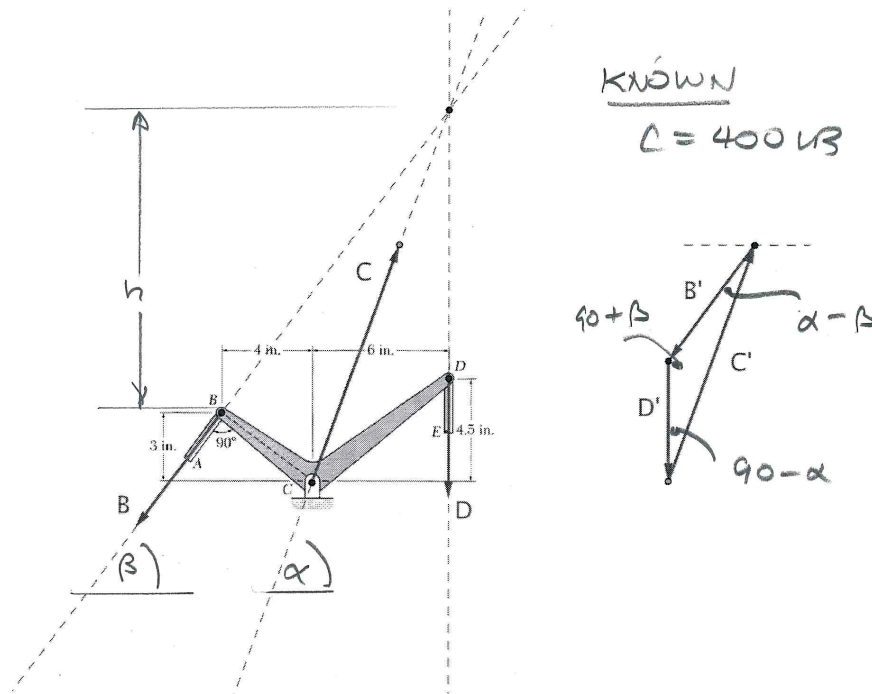
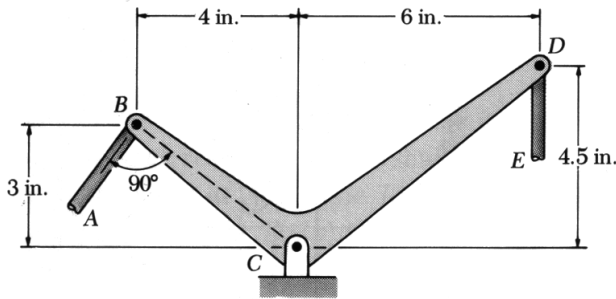


**Example 2**

Two links  $AB$  and  $DE$  are connected by a bell crank as shown. Determine the maximum force which may be safely exerted by link  $AB$  on the bell crank if the maximum allowable value for the reaction at  $C$  is 400 lb.



KNOWN  
 $C = 400 \text{ LB}$

$$\beta = \tan^{-1}\left(\frac{4}{3}\right) = 53.1^\circ$$

$$\frac{h}{10} = \tan \beta \Rightarrow h = 13.33''$$

$$\alpha = \tan^{-1}\left(\frac{h+3}{6}\right) = 69.83^\circ$$

$$\text{LOS: } \frac{C}{\sin(90+\beta)} = \frac{B}{\sin(90-\alpha)}$$

$$\therefore B = 230 \text{ LB}$$