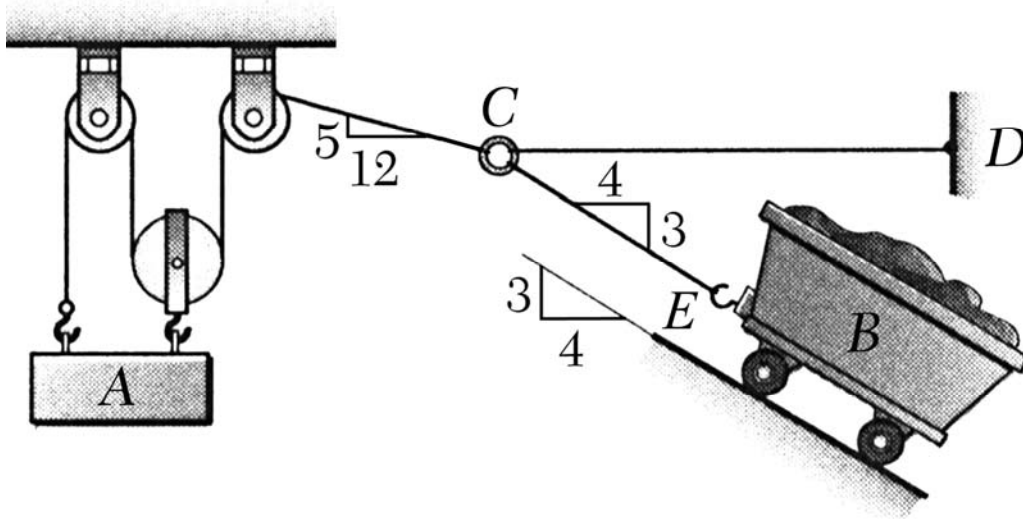


## MEEG 2003 [Quiz #3.m06](#)

The block  $A$  weighs 702 lb and the system shown is in equilibrium. Determine (a) the tension  $F_1$  in the cable whose slope is  $-5/12$ , (b) the tension  $F_{CE}$  in cable  $CE$ , (c) the tension  $F_{CD}$  in cable  $CD$ , (d) the weight  $W_B$  of cart  $B$ .



*FBD* for block  $A$  and the pulley just above block  $A$ : ①

$$F_1 = 234 \text{ lb } \textcircled{1}$$

*FBD* for ring connector at  $C$ : ①

$$F_{CE} = 150 \text{ lb } \textcircled{1}$$

*FBD* for cart  $B$ : ②

$$F_{CD} = 96 \text{ lb } \textcircled{2}$$

$$W_B = 250 \text{ lb } \textcircled{2}$$