

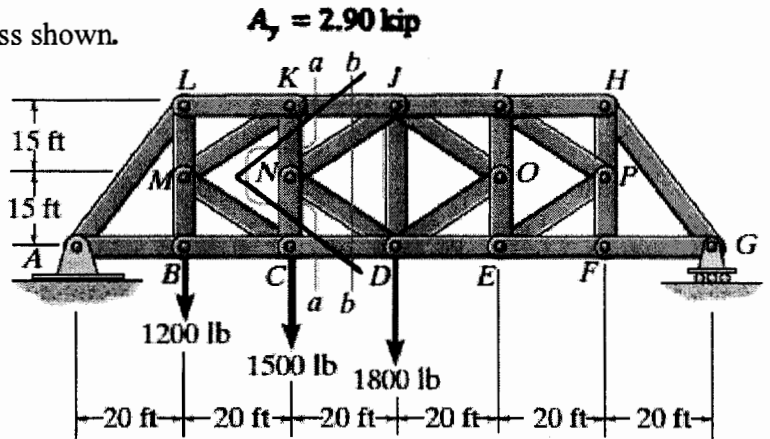
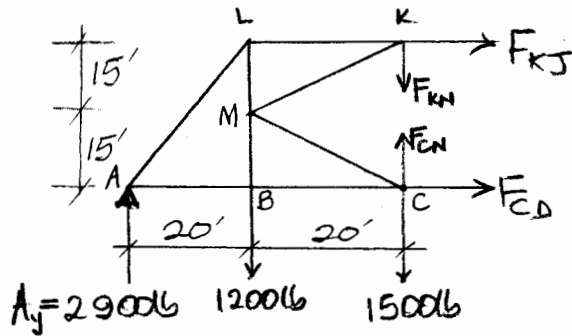
King Fahd University of Petroleum & Minerals
 CIVIL ENGINEERING DEPARTMENT
CE 201 STATICS (Sections 1 & 2)
 Second Semester 1432 / 2011 (102)

Name: Key
 ID #: _____

Quiz # 8

Score
 10

1) Determine the force in member *KJ* in the truss shown.



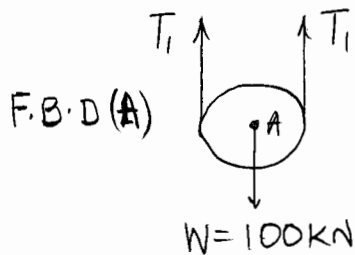
Taking moments about C,

$$+\circlearrowleft \sum M_C = -2900(20+20) + 1200(20) - 30 F_{KJ} = 0$$

$$30 F_{KJ} = -9200 \Rightarrow F_{KJ} = -3,067 \text{ lb}$$

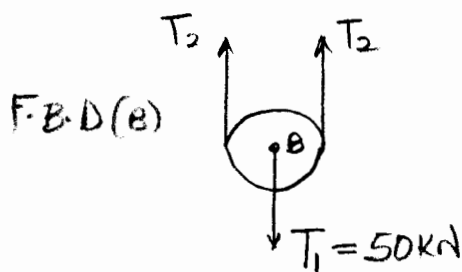
$$\Rightarrow F_{KJ} = 3,067 \text{ lb (C)}$$

2) Determine the force *P* required to hold the 100-kN weight in equilibrium.



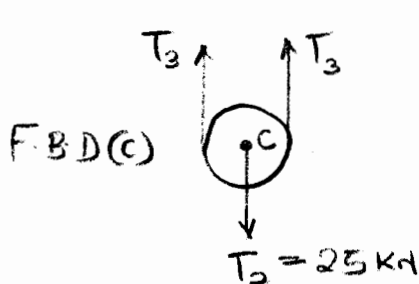
$$+\uparrow \sum F_y = 0 \Rightarrow 2T_1 - 100 = 0$$

$$\Rightarrow T_1 = 50 \text{ kN}$$



$$+\uparrow \sum F_y = 0 \Rightarrow 2T_2 - 50 = 0$$

$$\Rightarrow T_2 = 25 \text{ kN}$$



$$+\uparrow \sum F_y = 0 \Rightarrow 2T_3 - 25 = 0$$

$$\Rightarrow T_3 = 12.5 \text{ kN}$$

$$P = T_3 \Rightarrow P = 12.5 \text{ kN}$$

