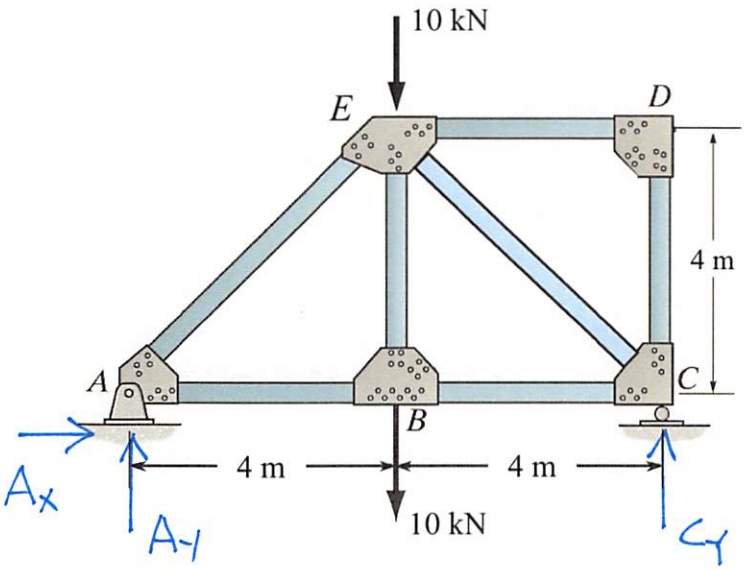
CIVL 3121 Quiz #2 S26 Name: _____

Determine all the bar forces in the truss.



$\circlearrowleft + \sum M_A = 0 = -10kN(4m) - 10kN(4m) + C_y(8m)$

$C_y = 10kN$

$+\uparrow \sum F_y = 0 = A_y + C_y - 10kN - 10kN$

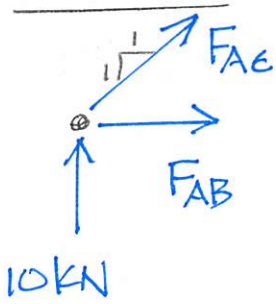
$A_y = 10kN$

$\xrightarrow{+} \sum F_x = 0 = A_x$

ZEROFORCE MEMBERS

$F_{CD} = F_{DE} = 0$

JOINT A



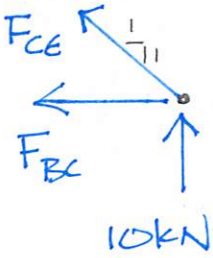
$+\uparrow \sum F_y = 0 = \frac{1}{\sqrt{2}} F_{AE} + 10kN$

$F_{AE} = -14.14\ kN$

$\xrightarrow{+} \sum F_x = 0 = F_{AB} + \frac{1}{\sqrt{2}} F_{AE}$

$F_{AB} = 10kN$

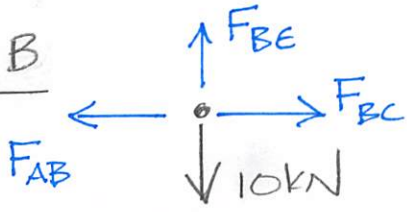
JOINT C



$+\uparrow \sum F_y = 0 = \frac{1}{\sqrt{2}} F_{CE} + 10kN$ $\quad F_{CE} = -14.14\ kN$

$\xrightarrow{+} \sum F_x = 0 = -\frac{1}{\sqrt{2}} F_{CE} - F_{BE}$ $\quad F_{BE} = 10kN$

JOINT B



$+\uparrow \sum F_y = 0 = F_{BE} - 10kN$

$F_{BE} = 10kN$