## Homework \#5

Note: Show all work, provide all answers in inches and radians

## Problem 1

a) Use virtual work to determine the vertical displacement of C
b) Use virtual work to determine the horizontal displacement of E

Area of members: $A_{A B}=A_{A C}=A_{B C}=3$ in. $^{2} \quad A_{B D}=A_{C D}=A_{C E}=A_{D E}=5 \mathrm{in}^{2}$ $E=29,000 \mathrm{ksi}$ for all members


## Problem 2

a) Use virtual work to determine the rotation at A
b) Use virtual work to determine the vertical displacement of C

$$
\begin{aligned}
& E=29,000 \mathrm{ksi}, I=100 \mathrm{in}^{4} \\
& (E I)_{\mathrm{AB}}=E I \\
& (E I)_{\mathrm{BC}}=2 E I
\end{aligned}
$$



