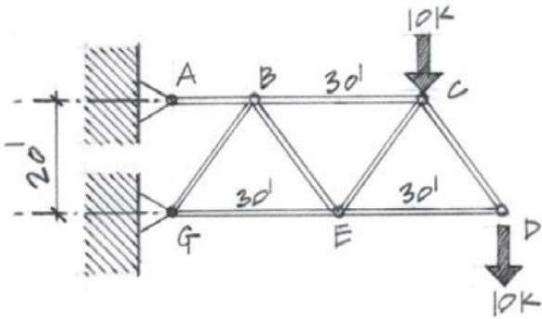
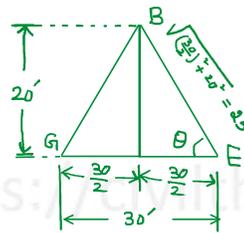
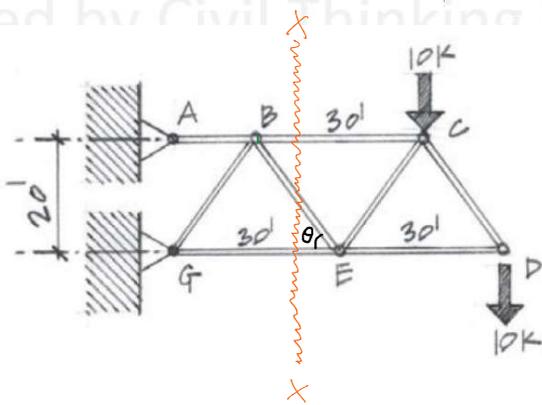


Find Truss Member Forces using Ritter's Method

1. Solve for member forces BC and BE

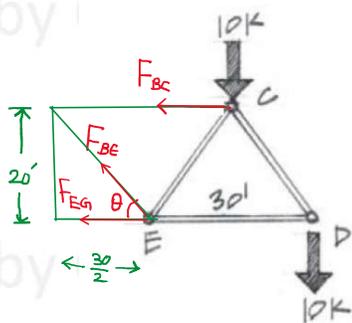


Solution: Using Ritter's method



$$\cos \theta = \frac{30/2}{25} = \frac{3}{5}$$

$$\sin \theta = \frac{20}{25} = \frac{4}{5}$$



$$\sum M_E = 0 :$$

$$(10K \times 30) + (10K \times \frac{30}{2}) - (F_{BC} \times 20) = 0$$

$$\Rightarrow F_{BC} = \frac{(10K \times 30) + (10K \times 15)}{20} = \frac{450K}{20} = 22.5K$$

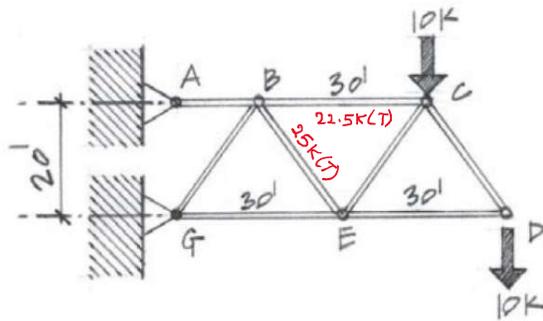
$$\Rightarrow F_{BC} = 22.5K (T)$$

$$\sum F_y = 0 :$$

$$F_{BE} \sin \theta - 10K - 10K = 0 \Rightarrow F_{BE} = \frac{20K}{\sin \theta} = \frac{20K}{4/5} = 25K$$

$$\Rightarrow F_{BE} = 25K (T)$$

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