

Member	Length	F^o	F^i	$F^o F^i (\text{length})$
AB	L	$20/3$	$2/3$	$40L/9$
BC	L	10	1	$10L$
CD	L	$10/3$	$1/3$	$10L/9$
EB	L	$10/3$	$1/3$	$10L/9$
FC	L	$20/3$	$2/3$	$40L/9$
AE	$\sqrt{2}L$	$-20\sqrt{2}/3$	$-2\sqrt{2}/3$	$\sqrt{2} \times 80L/9$
FD	$\sqrt{2}L$	$-10\sqrt{2}/3$	$-\sqrt{2}/3$	$\sqrt{2} \times 20L/9$
EC	$\sqrt{2}L$	$-20\sqrt{2}/3$	$-2\sqrt{2}/3$	$\sqrt{2} \times 80L/9$
FB	$\sqrt{2}L$	$-10\sqrt{2}/3$	$-\sqrt{2}/3$	$\sqrt{2} \times 20L/9$

$$\sum = (100 + \sqrt{2}(200))L/9 + 10L$$

$$= 52.54L$$

$$\Delta = \frac{52.54L}{EA} = \frac{52.54 \times 4000}{10^5} = 2.1 \text{ mm}$$

Well done to Emily Jones for getting it right.