Example 4:

The drawing below illustrates two poles supported by wires.

$\triangle ABC \sim \triangle GED$. $\overline{AF} \cong \overline{CF}$ and $\overline{FG} \cong \overline{GC} \cong \overline{DC}$.
Find the height of pole $\overline{EC}$.

$\dfrac{ABC}{GED} = \dfrac{30}{h} = \dfrac{80}{40}$

$30(40) = 80h$

$\dfrac{1200}{80} = \dfrac{80h}{80}$

$\boxed{15\,\text{ft} = h}$

B

E

30 ft

h

A   F   G   C   D

80 ft