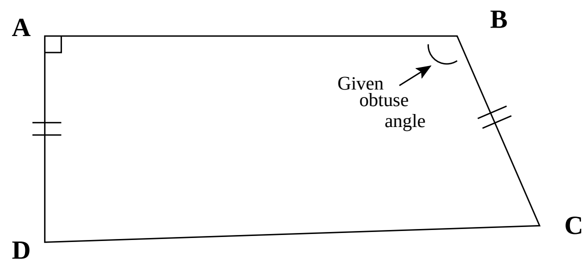
Theorem:

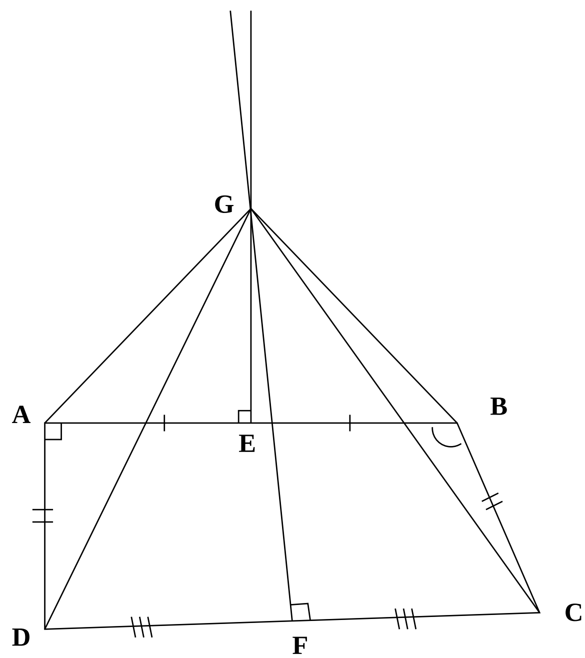
All obtuse angles are congruent to right angles.

Proof:

Let $\angle ABC$ be a given obtuse angle. Construct a line perpendicular to $\overline{AB}$ at A. Choose C and D so that $\overline{AD} \cong \overline{BC}$.



Construct perpendicular bisectors for $\overline{AB}$ and $\overline{CD}$. Because $\overline{AB}$ and $\overline{CD}$ are not parallel, their perpendicular bisectors must intersect in some point G. Draw lines $\overline{AG}$, $\overline{BG}$, $\overline{CG}$, and $\overline{DG}$.



$\Delta AGE \cong \Delta BGE$ (By side-angle-side triangle congruence)

$\Delta DGF \cong \Delta CGF$ (By side-angle-side triangle congruence)

So $\overline{AG} \cong \overline{BG}$, $\overline{DG} \cong \overline{CG}$, and $\angle GAE \cong \angle GBE$.

$\Delta AGD \cong \Delta BGC$ (By side-side-side triangle congruence)

So $\angle GAD \cong \angle GBC$.

Since $\angle GAE \cong \angle GBE$, $\angle DAE \cong \angle CBE$.

Therefore the given obtuse angle is congruent to a right angle.

Quod Erat Demonstrandum!