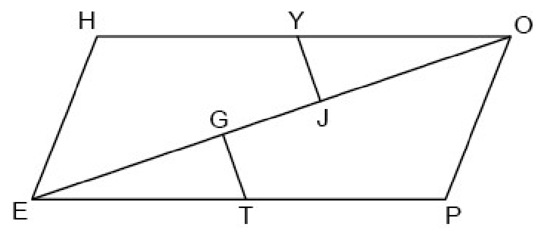
Name ____________ Date _____________

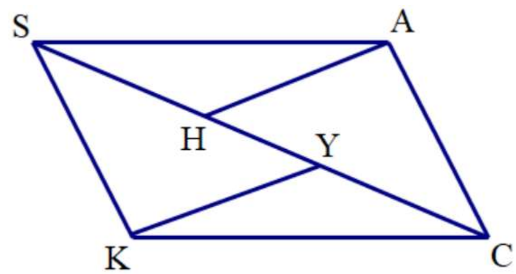
Mr. Schlansky Geometry

Parallelogram Proofs Part IV

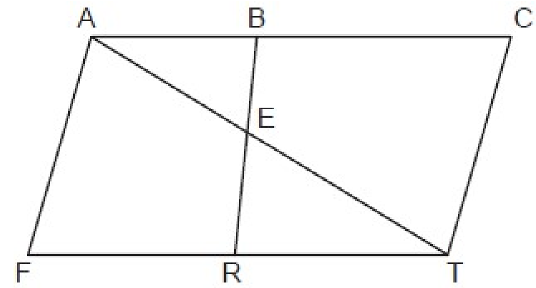
1. In quadrilateral *HOPE* below, $\overline{EH} \cong \overline{OP}$, $\overline{EP} \cong \overline{OH}$, $\overline{EJ} \cong \overline{OG}$, and $\overline{TG}$ and $\overline{YJ}$ are perpendicular to diagonal $\overline{EO}$ at points *G* and *J*, respectively. Prove that $\overline{TG} \cong \overline{YJ}$.



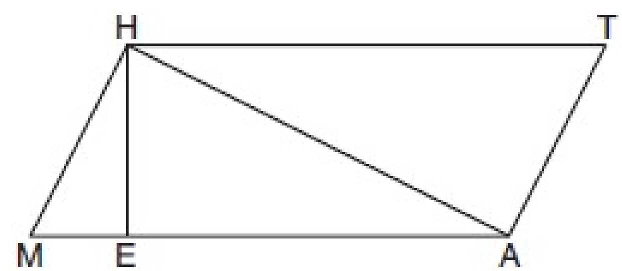
2. In quadrilateral SACK, $\angle KSY \cong \angle ACH$, $\overline{SK} \cong \overline{AC}$, $\overline{SY} \cong \overline{CH}$. Prove $\angle SAH \cong \angle CKY$



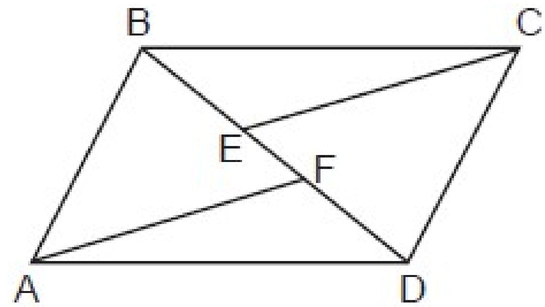
3. In the diagram below of quadrilateral *FACT*, $\overline{BR}$ intersects diagonal $\overline{AT}$ at *E*, $\overline{AF} \parallel \overline{CT}$, and $\overline{AF} \cong \overline{CT}$. Prove $(AB)(TE) = (AE)(TR)$



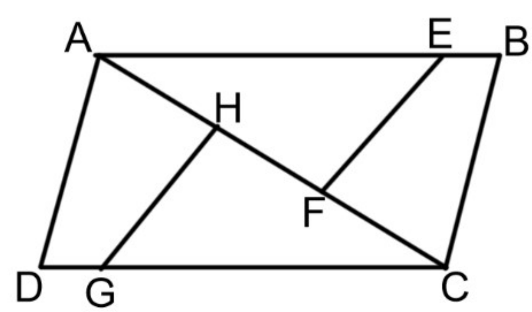
4. Given: Quadrilateral *MATH*, $\overline{HM} \cong \overline{AT}$, $\overline{HT} \cong \overline{AM}$, $\overline{HE} \perp \overline{MEA}$, and $\overline{HA} \perp \overline{AT}$.
Prove: $TA \bullet HA = HE \bullet TH$



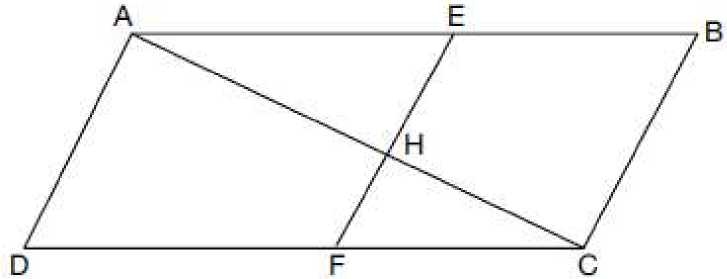
5. In the diagram of quadrilateral *ABCD* below, $\overline{AB} \cong \overline{CD}$, and $\overline{AB} \parallel \overline{CD}$. Segments *CE* and *AF* are drawn to diagonal $\overline{BD}$ such that $\overline{BE} \cong \overline{DF}$. Prove: $\angle BAF \cong \angle DCE$.



6. Given: $\overline{AE} \cong \overline{CG}$, $\overline{BE} \cong \overline{DG}$, $\overline{AH} \cong \overline{CF}$, $\overline{AD} \cong \overline{CB}$
Prove: $\overline{EF} \cong \overline{GH}$

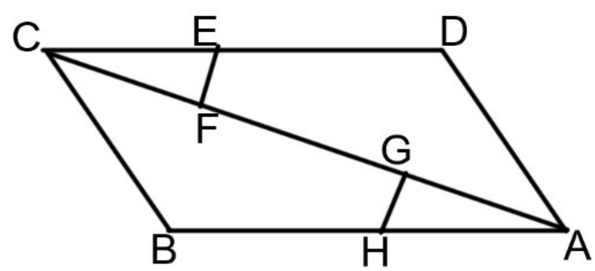


7. Given: Quadrilateral $ABCD$, $\overline{AC}$ and $\overline{EF}$ intersect at H, $\overline{AD} \parallel \overline{BC}$ and $\overline{AD} \cong \overline{BC}$. Prove: $(EH)(CH) = (FH)(AH)$

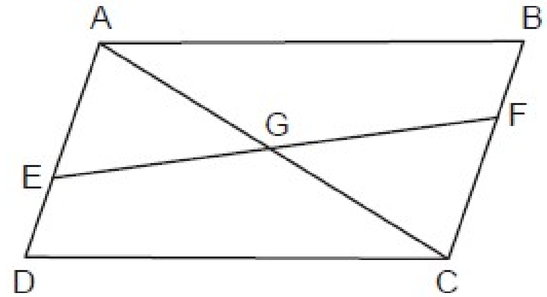


8. Given: $\overline{AB} \cong \overline{DC}$, $\overline{AD} \cong \overline{BC}$, $\overline{AF} \cong \overline{GC}$, $\overline{BH} \cong \overline{DE}$

Prove: $\overline{EF} \cong \overline{GH}$



9. Given: Quadrilateral *ABCD*, $\overline{AB} \cong \overline{CD}$, $\overline{AB} \parallel \overline{CD}$, diagonal $\overline{AC}$ intersects $\overline{EF}$ at *G*, and $\overline{DE} \cong \overline{BF}$. Prove: *G* is the midpoint of $\overline{EF}$.



10. Given: $\overline{KC} \parallel \overline{IN}$, $\overline{KC} \cong \overline{IN}$, $\overline{AL} \perp \overline{KI}$, $\overline{TD} \perp \overline{CN}$. Prove $\overline{KL} \bullet \overline{NT} = \overline{DN} \bullet \overline{KA}$