Name _____ Date _____
Mr. Schlansky Geometry

Quadrilateral Properties Review Sheet

1. Which quadrilateral has diagonals that always bisect its angles and also bisect each other?
1) rhombus
2) rectangle
3) parallelogram
4) isosceles trapezoid

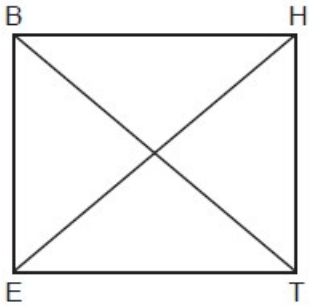
2. Given three distinct quadrilaterals, a square, a rectangle, and a rhombus, which quadrilaterals must have perpendicular diagonals?
1) the rhombus, only
2) the rectangle and the square
3) the rhombus and the square
4) the rectangle, the rhombus, and the square

3. A parallelogram must be a rhombus when its
1) Diagonals are congruent.
2) Opposite sides are parallel.
3) Diagonals are perpendicular.
4) Opposite angles are congruent.

4. A parallelogram must be a rectangle when its
1) diagonals are perpendicular
2) diagonals are congruent
3) opposite sides are parallel
4) opposite sides are congruent

5. Parallelogram *BETH*, with diagonals $\overline{BT}$ and $\overline{HE}$, is drawn below. What additional information is sufficient to prove that *BETH* is a rectangle?

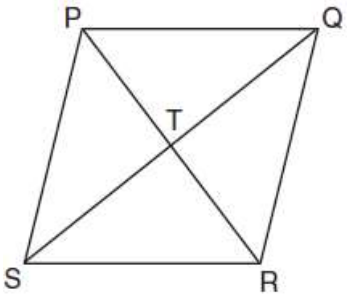
1) $\overline{BT} \perp \overline{HE}$
2) $\overline{BE} \parallel \overline{HT}$
3) $\overline{BT} \cong \overline{HE}$
4) $\overline{BE} \cong \overline{ET}$



6. Parallelogram *EATK* has diagonals $\overline{ET}$ and $\overline{AK}$. Which information is always sufficient to prove *EATK* is a rhombus?

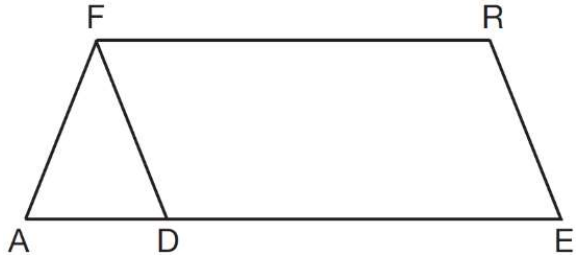
1) $\overline{EA} \perp \overline{AT}$
2) $\overline{EA} \cong \overline{AT}$
3) $\overline{ET} \cong \overline{AK}$
4) $\overline{ET} \cong \overline{AT}$

7. In the diagram of rhombus *PQRS* below, the diagonals $\overline{PR}$ and $\overline{QS}$ intersect at point *T*, $PR = 16$, and $QS = 30$. Determine and state the perimeter of *PQRS*.

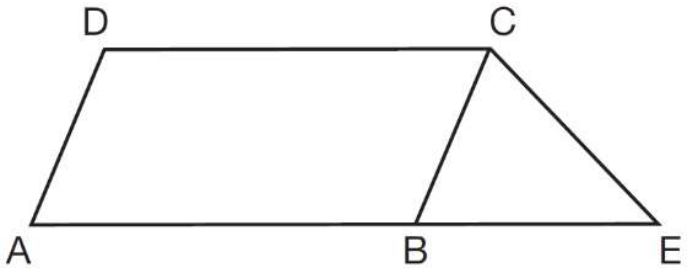


8. A rhombus has diagonals that measure 6 and 8. Find the perimeter of the rhombus.

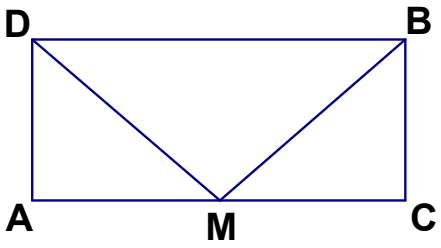
9. In the diagram of parallelogram *FRED* shown below, $\overline{ED}$ is extended to *A*, and $\overline{AF}$ is drawn such that $\overline{AF} \cong \overline{DF}$. If $m\angle R = 124°$, what is $m\angle AFD$?



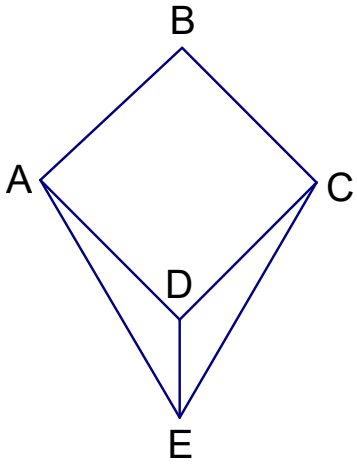
10. In the diagram below, $ABCD$ is a parallelogram, $\overline{AB}$ is extended through B to E, and $\overline{CE}$ is drawn. If $\overline{CE} \cong \overline{BE}$ and $m\angle D = 112°$, what is $m\angle E$?



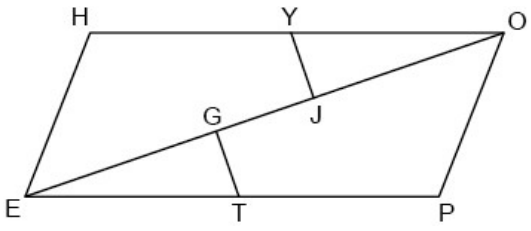
11. Given: ABCD is a rectangle, M is the midpoint of $\overline{AC}$
Prove: $\overline{DM} \cong \overline{BM}$



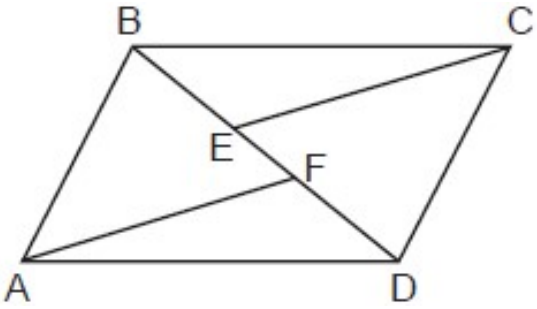
12. Given: ABCD is a rhombus, $\overline{AE} \cong \overline{CE}$
Prove: $\angle ADE \cong \angle CDE$



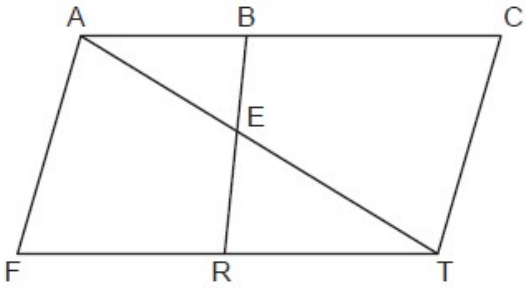
13. In quadrilateral *HOPE* below, $\overline{EH} \cong \overline{OP}$, $\overline{EP} \cong \overline{OH}$, $\overline{EJ} \cong \overline{OG}$, and $\overline{TG}$ and $\overline{YJ}$ are perpendicular to diagonal $\overline{EO}$ at points *G* and *J*, respectively. Prove that $\overline{TG} \cong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



14. 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: $\angle BAF \cong \angle DCE$.



15. 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 $(AB)(TE) = (AE)(TR)$



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