Name: _____

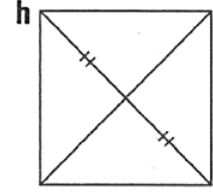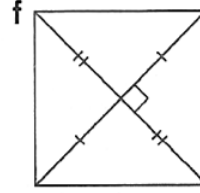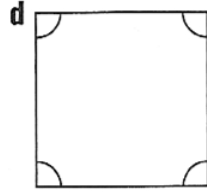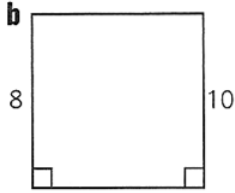# 6.6.D2 – PROOFS WITH SPECIAL QUADRILATERALS   Past due on: _____ Period: _____

1. What is the most descriptive name for each quadrilateral below?

b
8   10

d

f

h

2. Which quadrilateral(s) have congruent diagonals and opposite sides that are parallel?

3. In quadrilateral $MNOP$, $\angle M \cong \angle N$. What type(s) of quadrilateral could this be?

4. The measures of the angles of a quadrilateral are $x + 15$, $2x$, $x - 45$, and $2x - 60$. What type(s) of quadrilateral could this be?

5. Which pairs of quadrilaterals are congruent? Select ALL that apply:
   a. Two squares whose corresponding diagonals are congruent.
   b. Two rectangles whose corresponding diagonals are congruent.
   c. Two rhombuses whose corresponding diagonals are congruent.

Determine whether the parallelogram is a rhombus, a rectangle, or a square. Give the most precise description in each case.

6. A parallelogram has perpendicular diagonals and angle measures of 45°, 135°, 45°, and 135°.

7. A parallelogram has perpendicular and congruent diagonals.

8. A parallelogram has perpendicular diagonals and angle measures that are all 90°.

9. A parallelogram has congruent diagonals.

10. $JKMO$ is a parallelogram.

$\overleftrightarrow{JM}$ bisects $\angle OJK$ & $\angle OMK$

$OJ = x + 5$, $KM = y - 3$, and $JK = 2x - 4$
   a. Is $JKMO$ a rhombus? Explain your reasoning.
   b. Find the values of x and y.
   c. Find the perimeter of $JKMO$.
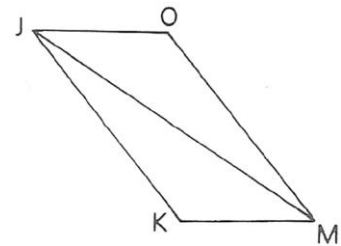
11. The diagonals of rhombus *TEAM* intersect at $P(2, 1)$. If the equation of the line that contains diagonal $\overline{TA}$ is $y = -x + 3$, what is the equation of the line that contains diagonal $\overline{EM}$?

Determine if the conclusion is valid and explain your reasoning. If the conclusion is NOT valid, tell what additional information is needed to make it valid.
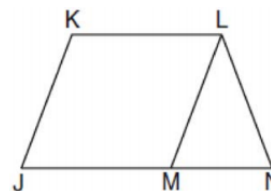
12. Given: $\overline{AB} \parallel \overline{CD}, \overline{AB} \perp \overline{BC}, \overline{AB} \cong \overline{CD}$
    Conclusion: *ABCD* is a rectangle
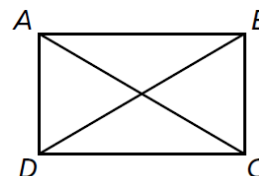
13. Given: $\overline{FH}$ bisects $\angle EFG$ & $\angle EHG$
    Conclusion: *EFGH* is a rhombus
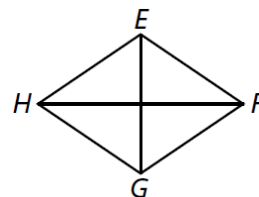
14. Given: *JKLM* is a parallelogram
    $\overline{JM} \cong \overline{LN}$
    $\angle LMN \cong \angle LNM$

    Prove: *JKLM* is a rhombus

STATEMENTS	REASONS