

Name: \_\_\_\_\_

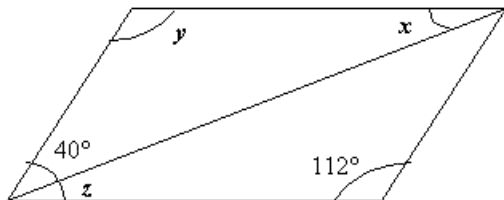
Date: \_\_\_\_\_

**UNIT 4**

**LESSON 5**

**AIM: HOW DO WE PROVE A QUADRILATERAL IS A PARALLELOGRAM?**

*Do Now:* Given the parallelogram below, find the values of  $x$ ,  $y$  and  $z$ .



**REASONS TO PROVE A PARALLELOGRAM**

1.

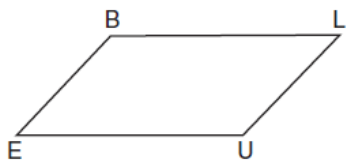
2.

3.

4.

5.

1. In quadrilateral  $BLUE$  shown below,  $\overline{BE} \cong \overline{UL}$ .



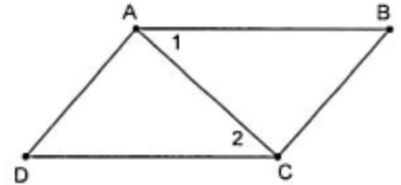
Which information would be sufficient to prove quadrilateral  $BLUE$  is a parallelogram?

- 1)  $\overline{BL} \parallel \overline{EU}$
- 2)  $\overline{LU} \parallel \overline{BE}$
- 3)  $\overline{BE} \cong \overline{BL}$
- 4)  $\overline{LU} \cong \overline{EU}$

2. Quadrilateral  $ABCD$  has diagonals  $\overline{AC}$  and  $\overline{BD}$ . Which information is *not* sufficient to prove  $ABCD$  is a parallelogram?

- 1)  $\overline{AC}$  and  $\overline{BD}$  bisect each other.
- 2)  $\overline{AB} \cong \overline{CD}$  and  $\overline{BC} \cong \overline{AD}$
- 3)  $\overline{AB} \cong \overline{CD}$  and  $\overline{AB} \parallel \overline{CD}$
- 4)  $\overline{AB} \cong \overline{CD}$  and  $\overline{BC} \parallel \overline{AD}$

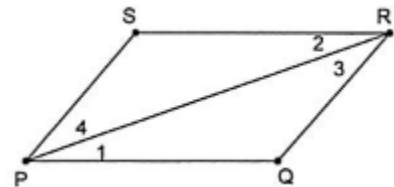
1. Given:  $ABCD$  is a quadrilateral  
 $\overline{AB} \cong \overline{CD}$   
 $\angle 1 \cong \angle 2$   
 Prove:  $ABCD$  is a parallelogram.



STATEMENT

REASON

2. Given:  $PQRS$  is a quadrilateral  
 $\angle 1 \cong \angle 2$   
 $\angle 3 \cong \angle 4$   
 Prove:  $PQRS$  is a parallelogram.

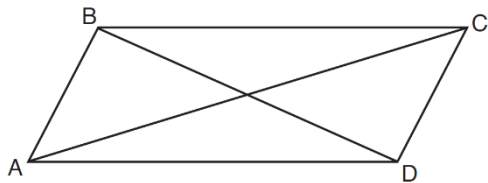


STATEMENT

REASON

HOMEWORK

1. Quadrilateral  $ABCD$  with diagonals  $\overline{AC}$  and  $\overline{BD}$  is shown in the diagram below.



Which information is *not* enough to prove  $ABCD$  is a parallelogram?

- 1)  $\overline{AB} \cong \overline{CD}$  and  $\overline{AB} \parallel \overline{DC}$
- 2)  $\overline{AB} \cong \overline{CD}$  and  $\overline{BC} \cong \overline{DA}$
- 3)  $\overline{AB} \cong \overline{CD}$  and  $\overline{BC} \parallel \overline{AD}$
- 4)  $\overline{AB} \parallel \overline{DC}$  and  $\overline{BC} \parallel \overline{AD}$

2. Quadrilateral  $MATH$  has both pairs of opposite sides congruent and parallel. Which statement about quadrilateral  $MATH$  is always true?

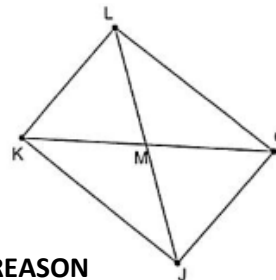
- 1)  $\overline{MT} \cong \overline{AH}$
- 2)  $\overline{MT} \perp \overline{AH}$
- 3)  $\angle MHT \cong \angle ATH$
- 4)  $\angle MAT \cong \angle MHT$

3. Given:  $\triangle GKL$

$\overline{LM}$  is a median to  $\overline{KG}$

$\overline{LM} \cong \overline{MJ}$

Prove:  $GJKL$  is a parallelogram



STATEMENT

REASON

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