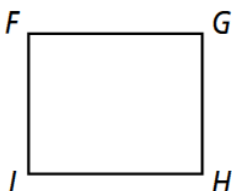


6.3 - PROVING QUADRILATERALS ARE PARALLELOGRAMS

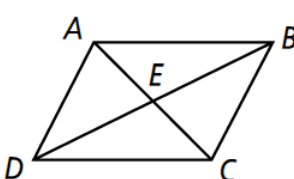
Which property (or definition) can you use to prove that the quadrilateral is a parallelogram based on the given information?

- A) Definition of parallelogram
- B) Both pairs of opposite sides are congruent
- C) One pair of opposite sides is parallel & congruent
- D) Both pairs of opposite angles are congruent
- E) Consecutive angles are supplementary
- F) The diagonals bisect each other

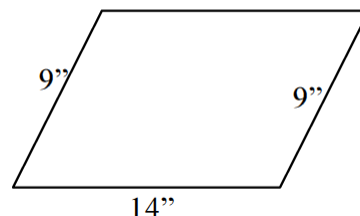
1. $\overline{FG} \parallel \overline{IH}, \overline{FI} \parallel \overline{GH}$



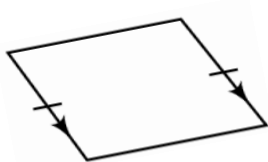
2. $\overline{AE} \cong \overline{EC}, \overline{BE} \cong \overline{ED}$



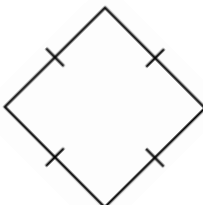
3. $14''$ (top side), $9''$ (left side), $14''$ (bottom side), $9''$ (right side)



4.



5.



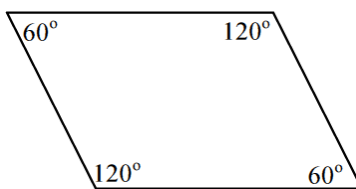
6.



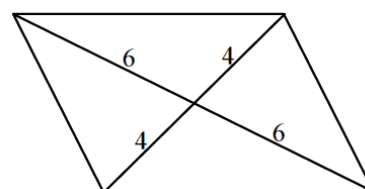
7.



8.



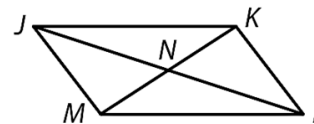
9.



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

- A) \overline{AC} & \overline{BD} bisect each other.
- B) $\overline{AB} \cong \overline{CD}$ & $\overline{BC} \cong \overline{AD}$
- C) $\overline{AB} \cong \overline{CD}$ & $\overline{AB} \parallel \overline{CD}$
- D) $\overline{AB} \cong \overline{CD}$ & $\overline{BC} \parallel \overline{AD}$

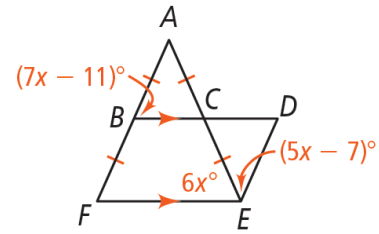
11. Does each set of given information guarantee that quadrilateral $JKLM$ is a parallelogram? Select the correct answer for each lettered part.



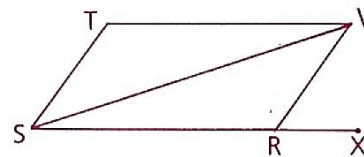
- A. $JN = 25$ cm, $JL = 50$ cm, $KN = 13$ cm, $KM = 26$ cm Yes No
- B. $\angle MJL \cong \angle KLJ, \overline{JM} \cong \overline{LK}$ Yes No
- C. $\overline{JM} \cong \overline{JK}, \overline{KL} \cong \overline{LM}$ Yes No
- D. $\angle MJL \cong \angle MLJ, \angle KJL \cong \angle KLJ$ Yes No
- E. $\triangle JKN \cong \triangle LMN$ Yes No

12. Given: $\overline{BD} \parallel \overline{FE}$
 $\overline{AB} \cong \overline{AC}$ & $\overline{BF} \cong \overline{CE}$

- Set up and solve an equation to find x .
- Is $\overline{BD} \parallel \overline{FE}$? Explain your reasoning.
- Is $BDEF$ a parallelogram? Explain your reasoning.



13. Given: $\angle XRV \cong \angle RST$
 $\angle RSV \cong \angle TVS$
 Prove: $RSTV$ is a parallelogram



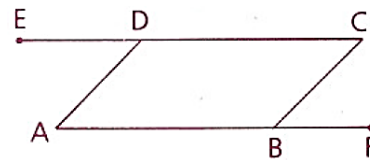
STATEMENTS

- $\angle XRV \cong \angle RST$
- $\angle RSV \cong \angle TVS$

REASONS

- Given
- Given

14. Given: $\overline{AB} \parallel \overline{CD}$
 $\angle EDA \cong \angle CBF$
 Prove: $ABCD$ is a parallelogram



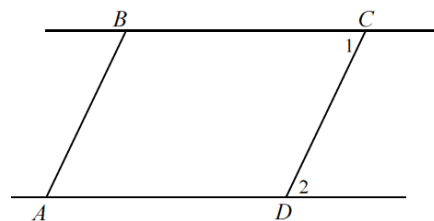
STATEMENTS

- $\overline{AB} \parallel \overline{CD}$
- $\angle EDA \cong \angle CBF$

REASONS

- Given
- Given

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



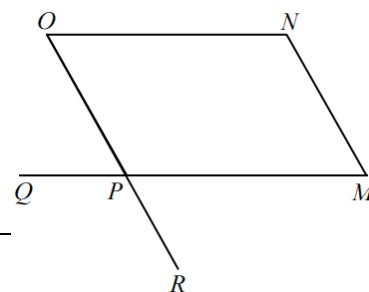
STATEMENTS

1. $\overline{AB} \parallel \overline{CD}$
2. $\angle 1 \cong \angle 2$

REASONS

1. Given
2. Given

16. Given: $\angle O \cong \angle M$
 $\angle QPR \cong \angle ONM$
 Prove: $MNOP$ is a parallelogram



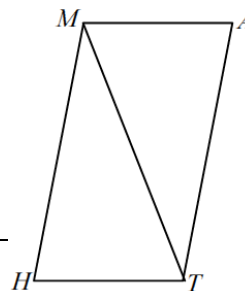
STATEMENTS

1. $\angle O \cong \angle M$
2. $\angle QPR \cong \angle ONM$

REASONS

1. Given
2. Given

17. Given: $\overline{MA} \cong \overline{HT}$
 $\angle AMT \cong \angle HTM$
 Prove: $MATH$ is a parallelogram



STATEMENTS

1. $\overline{MA} \cong \overline{HT}$
2. $\angle AMT \cong \angle HTM$

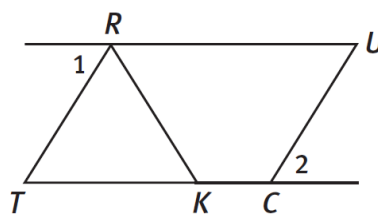
REASONS

1. Given
2. Given

18. Given: $\overline{RT} \cong \overline{RK}$
 $\angle RKT \cong \angle U$
 $\angle 1 \cong \angle 2$

Prove: $TRUC$ is a parallelogram

Hint: Prove that both pairs of opposite angles are congruent.



STATEMENTS

REASONS