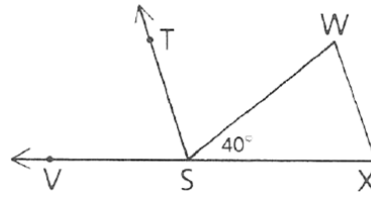


3.4 • Proofs With Parallel Lines

Name: _____

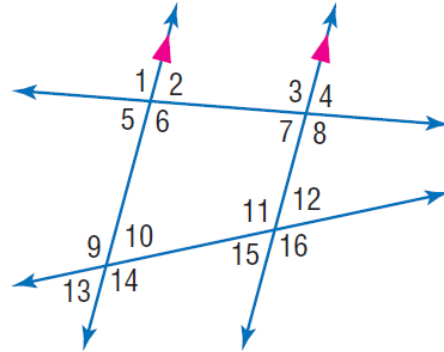
Past due on: _____ Period: _____

- Given: $\overline{ST} \parallel \overline{XW}$
 \overline{SW} bisects $\angle VSW$
 Find: $m\angle X$ and $m\angle W$
 What do you notice about $\triangle WSX$?



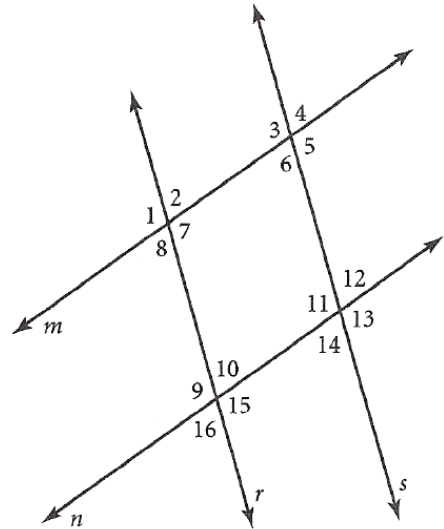
In the figure, $m\angle 3 = 110^\circ$ and $m\angle 12 = 55^\circ$. Find the indicated angle measures.

- $m\angle 1$
- $m\angle 6$
- $m\angle 2$
- $m\angle 10$
- $m\angle 13$
- $m\angle 15$

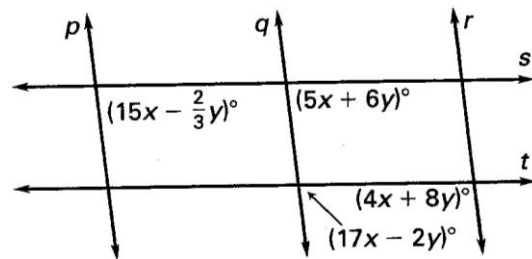


Use the figure at the right, in which $r \parallel s$ & $m \parallel n$. Give the theorem or postulate that justifies each statement.

- $\angle 8 \cong \angle 10$
- $\angle 14 \cong \angle 12$
- $m\angle 10 + m\angle 15 = 180^\circ$
- $\angle 1 \cong \angle 9$
- $m\angle 2 + m\angle 3 = 180^\circ$
- $\angle 3 \cong \angle 13$

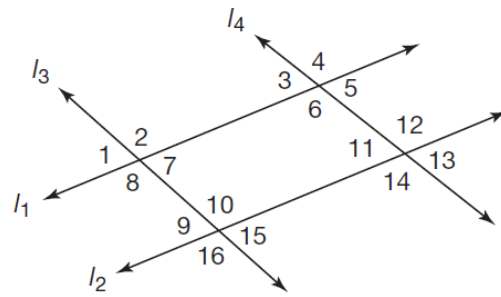


- Given: $p \parallel q$, $q \parallel r$, & $p \parallel r$.
 Set up and solve a system of equations to find the values of x and y .



Two-Column Proof Problems:

Problems 15 – 18 use the diagram shown at the right.



15. Given: $l_1 \parallel l_2$ & $l_3 \parallel l_4$

Prove: $\angle 4 \cong \angle 16$

STATEMENTS

REASONS

16. Given: $l_1 \parallel l_2$ & $l_3 \parallel l_4$

Prove: $\angle 1$ is supp. to $\angle 12$

STATEMENTS

REASONS

17. Given: $l_1 \parallel l_2$ & $l_3 \parallel l_4$

Prove: $\angle 2 \cong \angle 14$

STATEMENTS

REASONS

18. Given: $l_1 \parallel l_2$ & $l_3 \parallel l_4$

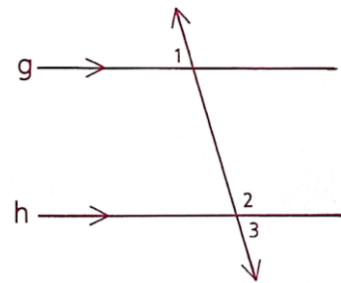
Prove: $m\angle 5 + m\angle 10 = 180^\circ$

STATEMENTS

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19. Given: $g \parallel h$

Prove: $\angle 1$ is supp. to $\angle 2$



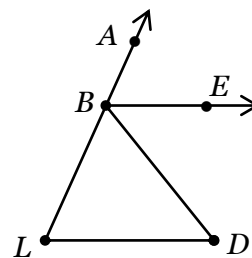
STATEMENTS

REASONS

20. Given: $\overrightarrow{BE} \parallel \overline{LD}$

\overrightarrow{BE} bisects $\angle ABD$

Prove: $\angle ABE \cong \angle D$



STATEMENTS

REASONS

