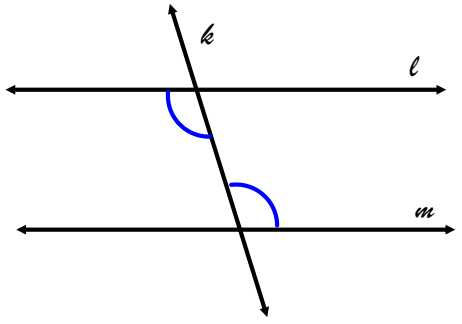
3.3 Proving Lines are Parallel

Objective: Students will be able to find the measures of angles in parallel lines cut by a transversal

If **Alternate Interior Angles** are **Congruent**, then the lines intersected by a transversal are parallel



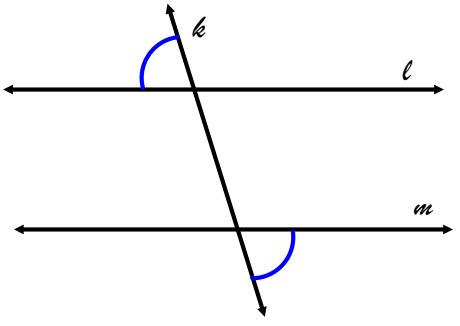
Prove $\ell \parallel m$.

Line ℓ is parallel to line m because

_____

are _____

If **Alternate Exterior Angles** are **Congruent**, then the lines intersected by a transversal are parallel



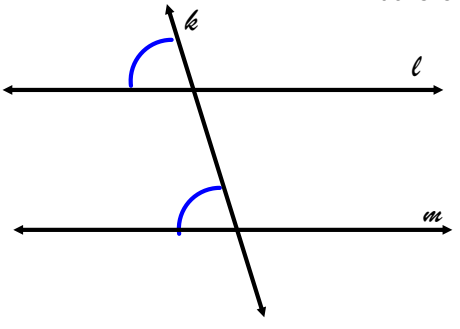
Prove $\ell \parallel m$.

Line ℓ is parallel to line m because

_____

are _____

If **Corresponding Angles** are **Congruent**, then the lines intersected by a transversal are parallel



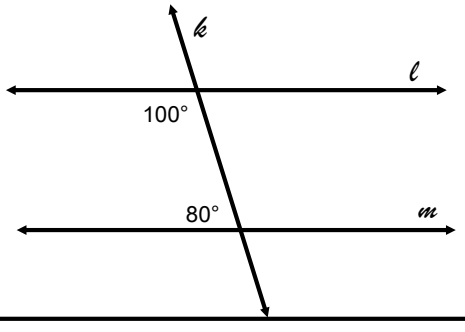
Prove $\ell \parallel m$.

Line ℓ is parallel to line m because

_____

are _____

If **Same Side Interior Angles** are **Supplementary**, then the lines intersected by a transversal are parallel



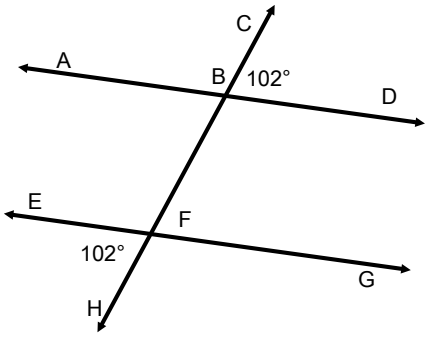
Prove $\ell \parallel m$.

Line ℓ is parallel to line m because

_____

are _____

$\overline{CH}$ is the transversal for line $\overline{AD}$ and $\overline{EG}$.



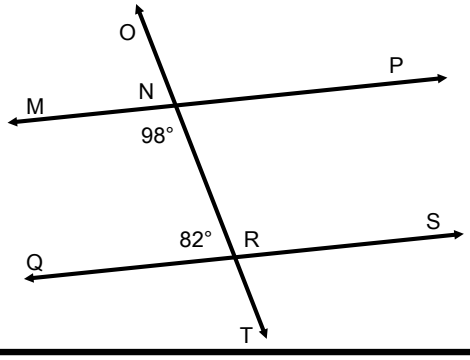
Prove $\overline{AD} \parallel \overline{EG}$

____ is parallel to _____ because

_____

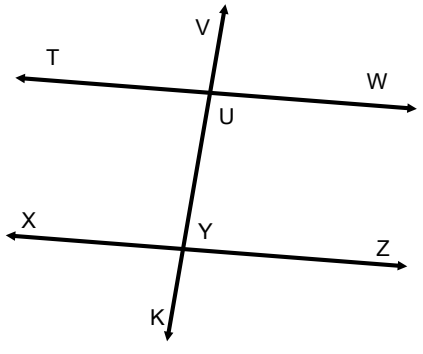
are _____

$\overline{OT}$ is the transversal for line $\overline{MP}$ and $\overline{QS}$.



Prove $\overline{MP} \parallel \overline{QS}$

$\overline{VK}$ is the transversal for line $\overline{TW}$ and $\overline{XZ}$.

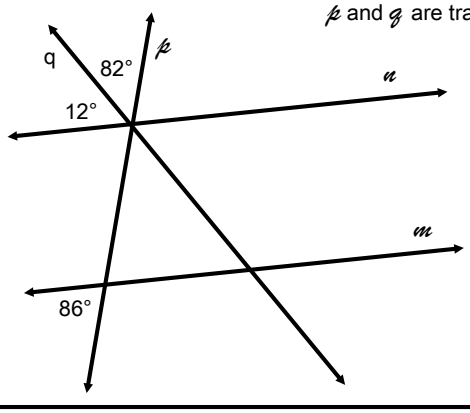


Which statement would prove MP ll QS?

1. $\angle TUV \cong \angle VUW$
2. $\angle WUK \cong \angle ZYV$
3. $\angle TUY \cong \angle ZYU$

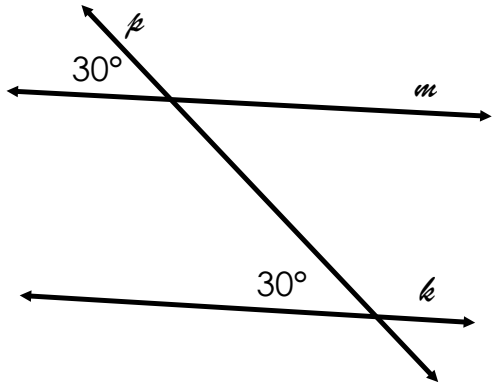
Explain your answer.

p and q are transversals for lines n and m

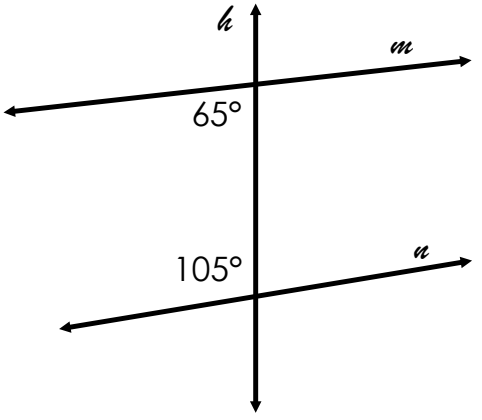


Prove $n \parallel m$

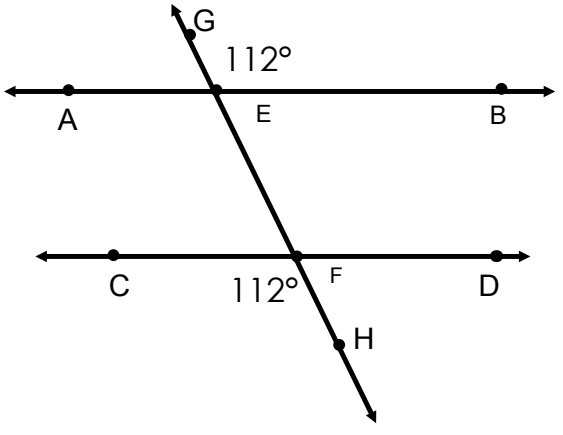
Independent Practice



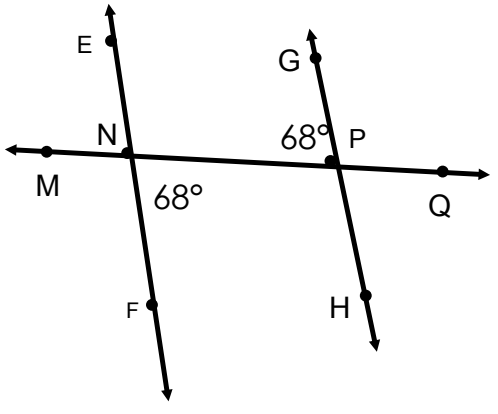
Prove $k \parallel m$



Prove $n \parallel m$

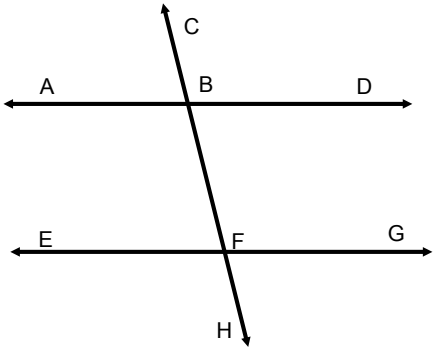


Prove $\overline{AB} \parallel \overline{CD}$



Prove $\overline{EF} \parallel \overline{GH}$

$\overline{CH}$ is the transversal for line $\overline{AD}$ and $\overline{EG}$.

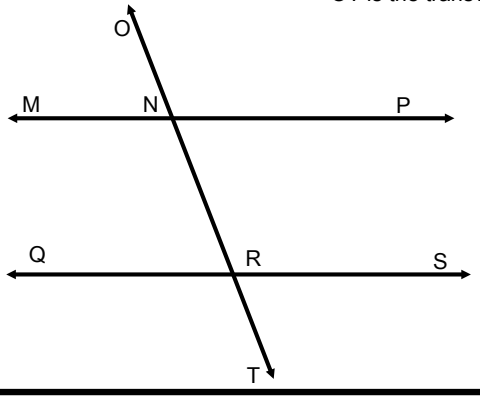


Which statement would prove $\overline{AB} \parallel \overline{EG}$?

1. $\angle ABC \cong \angle FBD$
2. $\angle ABC \cong \angle CBD$
3. $\angle ABC \cong \angle HFG$

Explain your answer.

$\overline{OT}$ is the transversal for line $\overline{MP}$ and $\overline{QS}$.

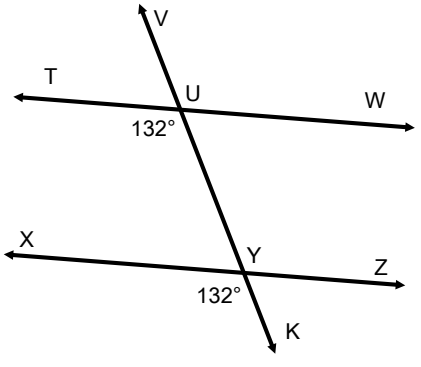


Which statement would prove $\overline{MP} \parallel \overline{QS}$?

1. $\angle MNT \cong \angle QRN$
2. $\angle ONP \cong \angle NRQ$
3. $\angle ONM \cong \angle QRO$

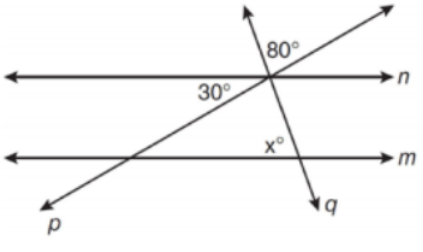
Explain your answer.

$\overline{VK}$ is the transversal for line $\overline{TW}$ and $\overline{XZ}$.



Prove $\overline{TW} \parallel \overline{XZ}$

In the diagram below, lines n and m are cut by transversals p and q.



What value of x would make lines n and m parallel?

Explain your answer