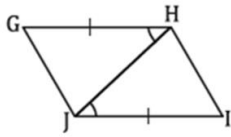


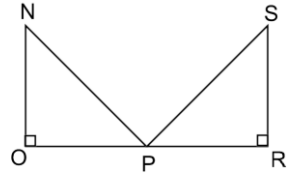
1. Given:  $\overline{GH} \cong \overline{IJ}$ ,  $\angle GHJ \cong \angle IJH$



Prove:  $\overline{GJ} \cong \overline{IH}$

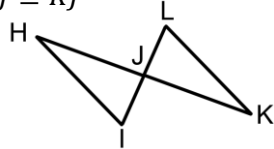
2. Given:  $\overline{NP} \cong \overline{SP}$  and P is the midpoint of  $\overline{OR}$

Prove:  $\angle OPN \cong \angle RPS$



3. Given:  $\angle HIJ \cong \angle KLJ$  and  $\overline{HJ} \cong \overline{KJ}$

Prove:  $\overline{FG} \cong \overline{JH}$



4. Given:  $\angle ABC \cong \angle CDA$  and  $\overline{AB} \parallel \overline{CD}$

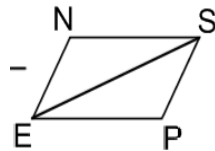
Prove:  $\overline{BC} \cong \overline{DA}$



**It is recommended that you review all proofs for parallelograms and their converses.**

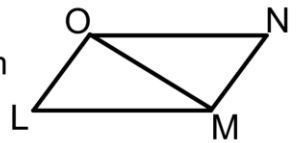
Given: PENS is a parallelogram

Prove:  $\overline{PE} \cong \overline{NS}$  and  $\overline{EN} \cong \overline{SP}$



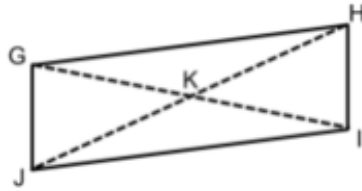
Given:  $\overline{ON} \cong \overline{ML}$  and  $\overline{LO} \cong \overline{NM}$

Prove: LMNO is a parallelogram



GHIJ is a parallelogram. Find the value of each of the following variables.

a.  $\overline{GH} = 9x - 4$  and  $\overline{JI} = 5x + 12$

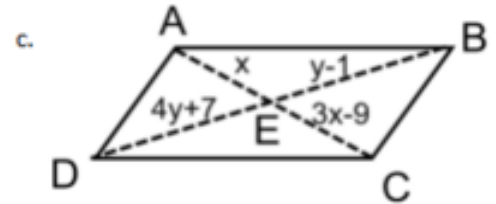
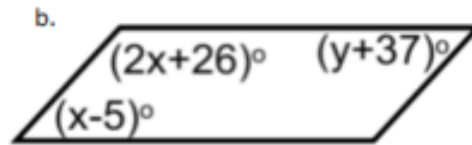
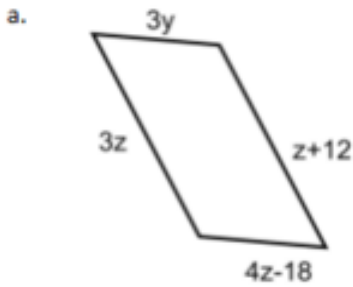


b.  $\angle HGJ = (11y + 68)^\circ$  and  $\angle GHI = (13y + 4)^\circ$

c.  $\angle GJI = (3w + 10)^\circ$  and  $\angle IHG = (9w - 98)^\circ$

d.  $\overline{GK} = 3z + 2$  and  $\overline{GI} = z + 34$

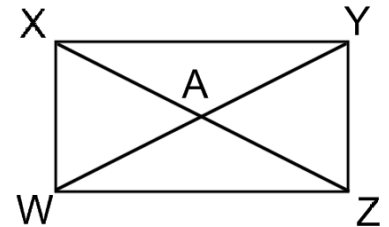
9. Determine the value of each variable that would make the following a parallelogram. Explain which converse property would make it a parallelogram.



10. The following figure is a rectangle. Find the value of the given variable.

a.  $\overline{XA} = 2x + 4$  and  $\overline{WA} = 3x - 2$

b.  $\overline{XZ} = 6x - 5$  and  $\overline{YW} = 2x + 19$



c.  $\overline{YA} = x + 3$  and  $\overline{XZ} = 5x - 9$