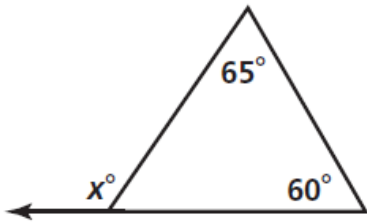
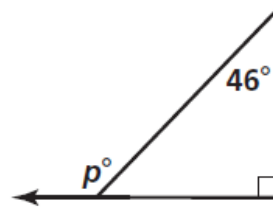


**Solve for the variables.**

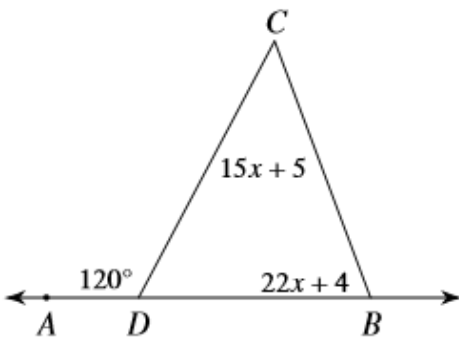
1.



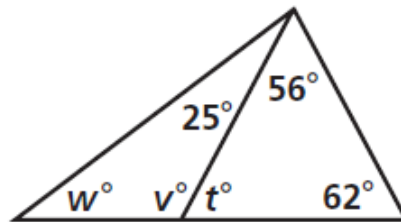
2.



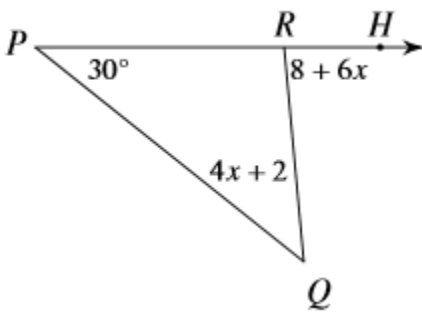
3.



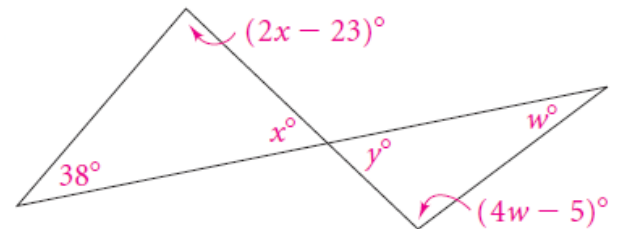
4.



5.

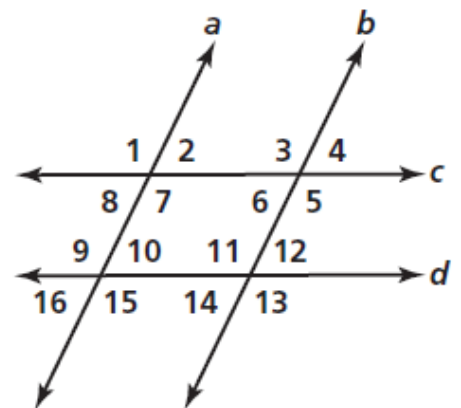


6.



**7. Determine if each statement is true or false, based on the diagram.**

- a.  $\angle 2$  and  $\angle 10$  are corresponding angles.
- b.  $\angle 3$  and  $\angle 7$  are alternate interior angles.
- c.  $\angle 1$  and  $\angle 8$  are same-side interior angles.
- d. If  $\angle 11$  and  $\angle 15$  are congruent, then  $a \parallel b$ .
- e. If  $\angle 14$  and  $\angle 15$  are supplementary, then  $c \parallel d$ .

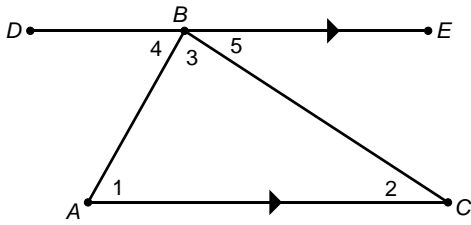


8. Complete the proof of the following theorem:

“The sum of the measures of the interior angles of a triangle is  $180^\circ$ .”

Given:  $\triangle ABC$

Prove:  $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$



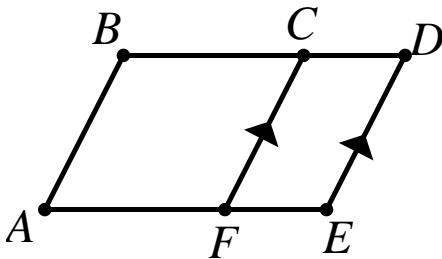
Statements	Reasons
1. $\triangle ABC$	1.
2. Through point B, draw $\overline{DBE}$ parallel to $\overline{AC}$ .	2.
3. $m\angle 1 = m\angle 4$ $m\angle 2 = m\angle 5$	3.
4. $m\angle 4 + m\angle 5 + m\angle 3 = 180^\circ$	4.
5. $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$	5.

Complete a Two-Column, Flow Chart, or Paragraph Proof.

9. Given:  $\overline{FC} \parallel \overline{ED}$

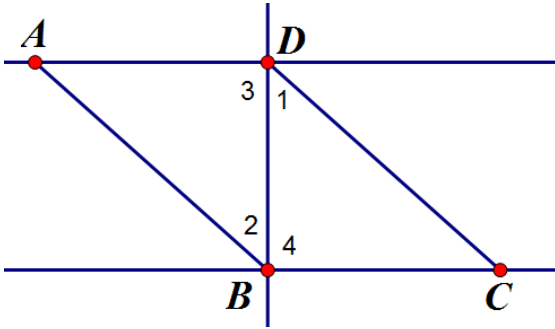
$\angle A \cong \angle D$

Prove:  $\angle A \cong \angle BCF$



10. Given:  $\overline{BC} \perp \overline{BD}$   
 $\overline{AD} \perp \overline{DB}$

Prove:  $\overline{AD} \parallel \overline{BC}$



11. Given: Parallelogram ABCD

Prove:  $\angle ABC \cong \angle ADC$

Hint: Use the addition method.

