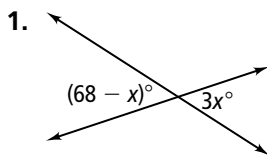


Practice

Form K

Proving Angles Congruent

Find the value of each variable.

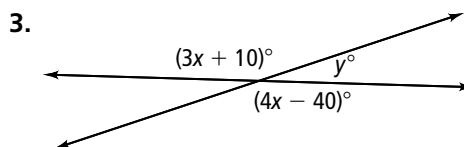
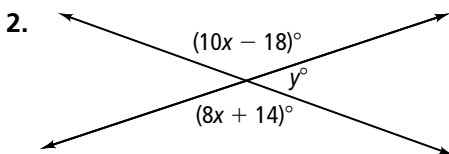


To start, identify the relationship between the marked angles in the diagram.

The marked angles are ?.

Then write an equation to express this relationship.

$$\underline{\quad ? \quad} = \underline{\quad ? \quad}$$



Find the measures of the labeled angles in each exercise.

4. Exercise 1

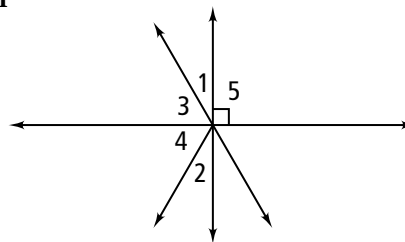
5. Exercise 2

6. Exercise 3

Developing Proof Complete the following proof by filling in the blanks.

7. **Given:** $\angle 1 \cong \angle 2$

Prove: $\angle 3 \cong \angle 4$



Statements	Reasons
1) $\angle 1 \cong \angle 2$	1) Given
2) $m\angle 1 + m\angle 3 + m\angle 5 = 180$	2) <u> ?</u>
3) $m\angle 1 + m\angle 3 + 90 = 180$	3) <u> ?</u>
4) $m\angle 1 + m\angle 3 = 90$	4) <u> ?</u>
5) $m\angle 4 + m\angle 2 = m\angle 5$	5) <u> ?</u>
6) $m\angle 4 + m\angle 2 = 90$	6) <u> ?</u>
7) $m\angle 4 + m\angle 1 = 90$	7) <u> ?</u>
8) $m\angle 4 = m\angle 3$	8) <u> ?</u>

8. **Reasoning** $\angle A$ and $\angle B$ are adjacent complementary angles. $\angle C$ is supplementary to the angle formed by $\angle A$ and $\angle B$. What can you conclude about $\angle C$? Explain.

Practice (continued)

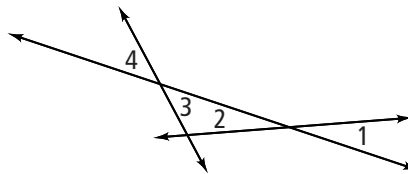
Form K

Proving Angles Congruent

9. Developing Proof Fill in the blanks to complete the paragraph proof below.

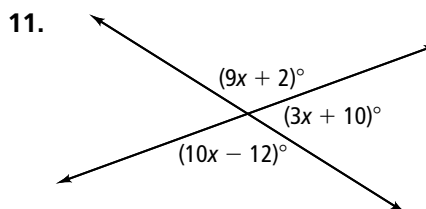
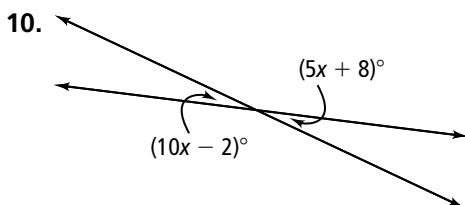
Given: $\angle 1 \cong \angle 4$

Prove: $\angle 2 \cong \angle 3$

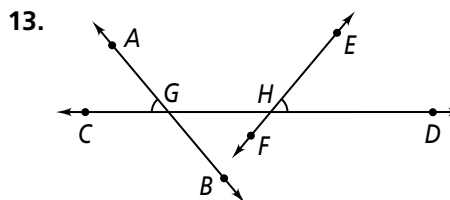
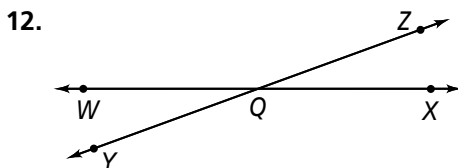


$\angle 1 \cong \angle 4$ because it is given. $\angle 1 \cong \angle 2$ by the ?. $\angle 2 \cong \angle 4$ by the ?.
 $\angle 3 \cong \angle 4$ by the ?. It follows that ? \cong ? by the ?.

Algebra Find the value of each variable and the measure of each labeled angle.



Name two pairs of congruent angles in each figure. Justify your answers.



Algebra Find the measure of each angle.

14. $\angle A$ is three times as large as its complement, $\angle B$.

15. $\angle A$ is 21 less than twice as large as its supplement, $\angle B$.

16. $\angle A$ is congruent to its supplement, $\angle B$.

17. $\angle A$ is 18 more than five times its complement, $\angle B$.