

Name:

1.6 Geometry— Describing Pairs of Angles

1) Draw and label the following.

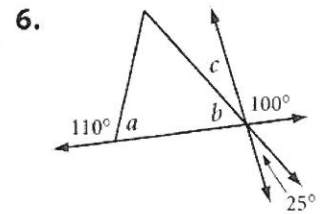
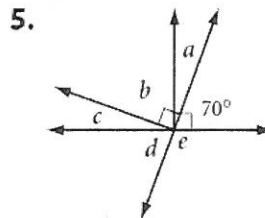
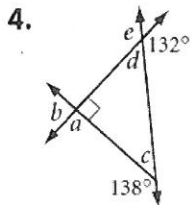
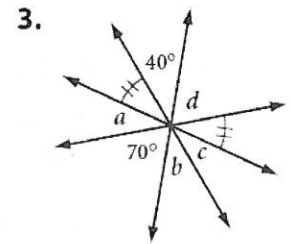
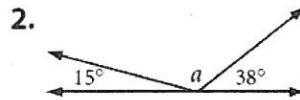
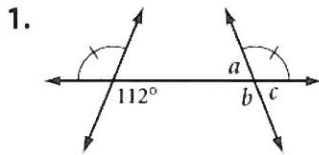
1. Acute angle DOG with a measure of 45°

3. Obtuse angle BIG with angle bisector \overline{IE}

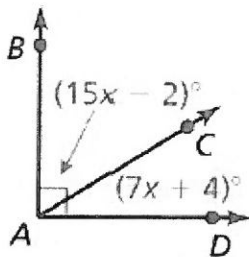
5. $\overline{PE} \perp \overline{AR}$

7. Complementary angles $\angle A$ and $\angle B$
with $m\angle A = 40^\circ$

2)



3) 12.



13. $\angle UVW$ and $\angle XYZ$ are complementary angles,
 $m\angle UVW = (x - 10)^\circ$, and $m\angle XYZ = (4x - 10)^\circ$.

14. $\angle EFG$ and $\angle LMN$ are supplementary angles,
 $m\angle EFG = (3x + 17)^\circ$, and $m\angle LMN = \left(\frac{1}{2}x - 5\right)^\circ$.

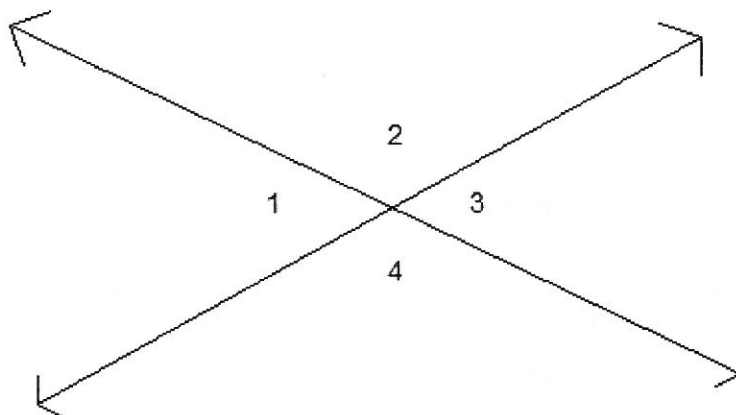
- 4) **In Exercises 19–22, find the measure of each angle.**
(See Example 5.)

19. Two angles form a linear pair. The measure of one angle is twice the measure of the other angle.
20. Two angles form a linear pair. The measure of one angle is $\frac{1}{3}$ the measure of the other angle.
21. The measure of an angle is nine times the measure of its complement.

- 5) **MATHEMATICAL CONNECTIONS** In Exercises 32–35, write and solve an algebraic equation to find the measure of each angle based on the given description.

32. The measure of an angle is 6° less than the measure of its complement.
33. The measure of an angle is 12° more than twice the measure of its complement.
34. The measure of one angle is 3° more than $\frac{1}{2}$ the measure of its supplement.
35. Two angles form a linear pair. The measure of one angle is 15° less than $\frac{2}{3}$ the measure of the other angle.

6)



$$\begin{aligned}m\angle 1 &= 4x + 1 \\m\angle 2 &= 3x + 6y \\m\angle 3 &= 7x - 5y \\ \text{Find } m\angle 4\end{aligned}$$