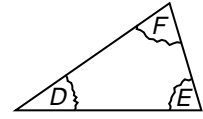


## Study Guide

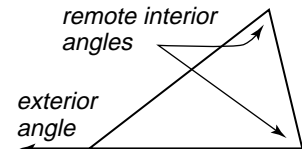
**Measuring Angles in Triangles**

On a separate sheet of paper, draw a triangle of any size. Label the three angles  $D$ ,  $E$ , and  $F$ . Then tear off the three corners and rearrange them so that the three vertices meet at one point, with  $\angle D$  and  $\angle F$  each adjacent to  $\angle E$ . What do you notice?



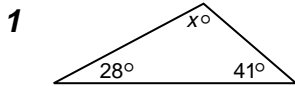
The sum of the measures of the angles of a triangle is 180.

When one side of a triangle is extended, the angle formed is called the **exterior angle**. In a triangle, the angles not adjacent to an exterior angle are called **remote interior angles**.

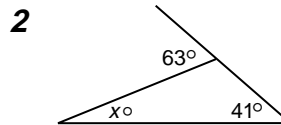


The measure of an exterior angle of a triangle is equal to the sum of the measures of the two remote interior angles.

**Examples:** Find the value of  $x$  in each figure.

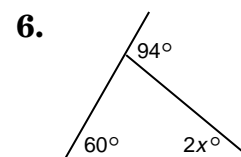
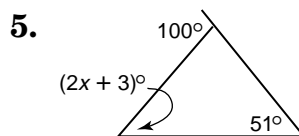
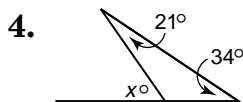
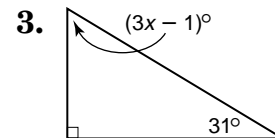
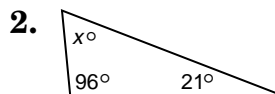
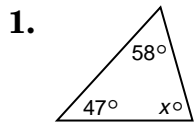


$$\begin{aligned} 28 + 41 + x &= 180 \\ 69 + x &= 180 \\ x &= 111 \end{aligned}$$



$$\begin{aligned} x + 41 &= 63 \\ x &= 22 \end{aligned}$$

**Find the value of  $x$ .**



**Find the measure of each angle.**

7.  $\angle 1$

8.  $\angle 2$

9.  $\angle 3$

10.  $\angle 4$

11.  $\angle 5$

12.  $\angle 6$

