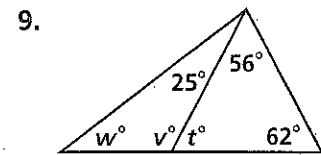
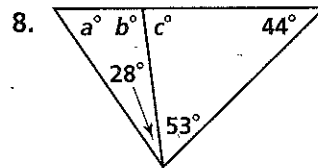
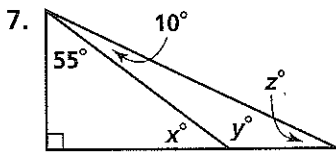
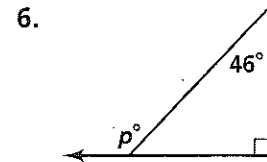
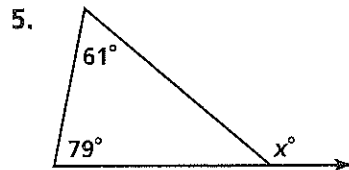
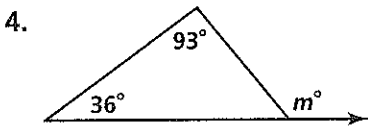
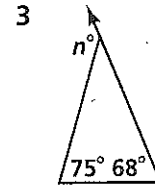
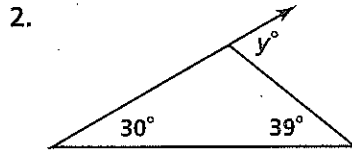
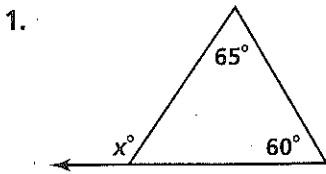


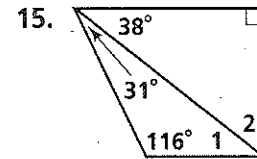
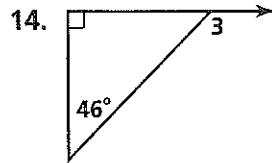
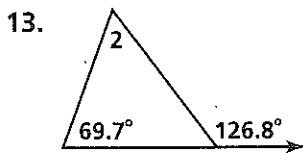
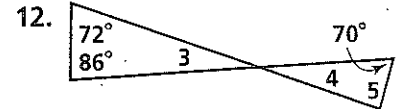
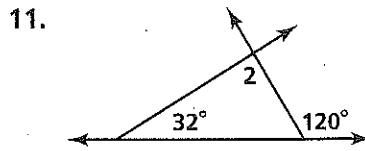
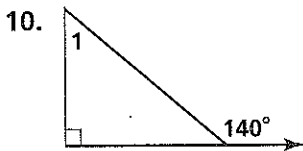
Practice 3-3

Parallel Lines and the Triangle Angle-Sum Theorem

Find the value of each variable.



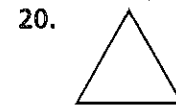
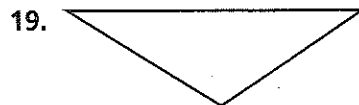
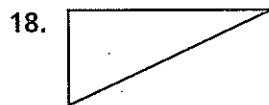
Find the measure of each numbered angle.



16. The sides of a triangle are 10 cm, 8 cm, and 10 cm. Classify the triangle.

17. The angles of a triangle are 44° , 110° , and 26° . Classify the triangle.

Use a protractor and a centimeter ruler to measure the angles and the sides of each triangle. Classify each triangle by its angles and sides.



Reteaching 3-3

Parallel Lines and the Triangle Angle-Sum Theorem

OBJECTIVE: Classifying triangles and finding the measures of their angles

MATERIALS: Ruler

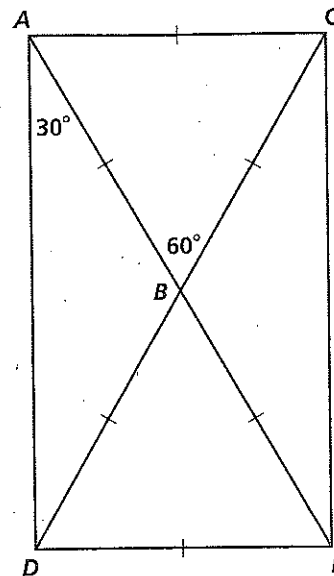
Example

In the diagram at the right, $ACED$ has four right angles. Find the missing angle measures in $\triangle ABC$, and classify them. Then classify $\triangle ABC$ in as many ways as you can.

$$\begin{aligned}
 m\angle CAB + m\angle DAB &= 90 && \text{Angle Addition Postulate} \\
 m\angle CAB + 30 &= 90 && \text{Substitution} \\
 m\angle CAB &= 60 && \text{Subtraction Property of Equality} \\
 m\angle ACB + m\angle CAB + m\angle ABC &= 180 && \text{Triangle Angle-Sum Theorem} \\
 m\angle ACB + 60 + 60 &= 180 && \text{Substitution} \\
 m\angle ACB + 120 &= 180 && \text{Addition} \\
 m\angle ACB &= 60 && \text{Subtraction Property of Equality}
 \end{aligned}$$

Because $m\angle CAB < 90$ and $m\angle ACB < 90$, $\angle CAB$ and $\angle ACB$ are acute.

Therefore, $\triangle ABC$ is equilateral, equiangular, and acute.



Exercises

Refer to the diagram above.

1. Find the missing angle measures in $\triangle ABD$, $\triangle CBE$, and $\triangle BDE$.
2. Name the eight triangles in the diagram. Then sketch the triangles, and classify them in as many ways as possible. ($\triangle ABC$ has been classified in the example.)

In the diagram at the right, $\angle RPT$, $\angle PTS$, $\angle TSR$, and $\angle SRP$ are right angles.

3. Find the missing angle measures in $\triangle PQT$, $\triangle PQR$, $\triangle RQS$, and $\triangle SQT$.
4. Measure the side lengths of $\triangle PQT$, $\triangle PQR$, $\triangle RQS$, and $\triangle SQT$ to the nearest millimeter.
5. List and classify each triangle. (*Hint:* There are eight triangles.)

