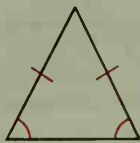


Special Triangle Relationships (pages 93, 135–136, 290, 295, 300)

Isosceles Triangle



At least 2 sides are congruent.
Angles opposite congruent sides are congruent.

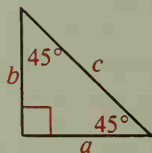
By the Pythagorean Theorem, in $\triangle ABC$

$$c^2 = a^2 + b^2.$$

Since $\angle C$ is a right angle,

$$m\angle A + m\angle B = 90.$$

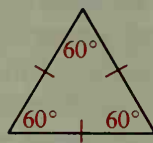
45°-45°-90° Triangle



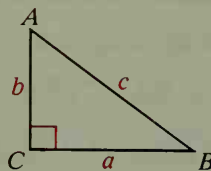
$$\begin{aligned} a &= b \\ c &= \sqrt{2}a \\ &= \sqrt{2}b \end{aligned}$$

Legs are congruent.
Hypotenuse = $\sqrt{2} \cdot \text{leg}$

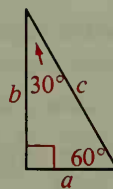
Equilateral Triangle



All sides are congruent.
All angles are congruent.



30°-60°-90° Triangle



$$\begin{aligned} c &= 2a \\ b &= \sqrt{3}a \end{aligned}$$

Hypotenuse = $2 \cdot \text{shorter leg}$
Longer leg = $\sqrt{3} \cdot \text{shorter leg}$

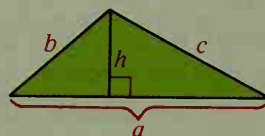
Perimeter, Area, and Volume Formulas (pages 424, 429, 447, 469, 476, 518)

Rectangle



Perimeter = $2l + 2w$
Area = lw

Triangle



Perimeter = $a + b + c$
Area = $\frac{1}{2}(\text{base} \times \text{height})$
= $\frac{1}{2}ah$