

Geometry- Special Right Triangles

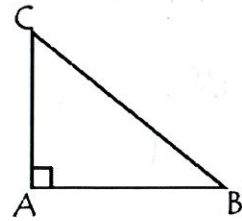
Right Triangles

The side opposite the right angle is called the hypotenuse.

Which side is this in $\triangle ABC$? \overline{BC}

The other two sides of a right triangle are called legs.

Which sides are these in $\triangle ABC$? $\overline{AC} + \overline{AB}$



The legs are often referred to as opposite sides.

Which side is opposite $\angle C$ in $\triangle ABC$? \overline{AB}

Which side is opposite $\angle B$ in $\triangle ABC$? \overline{AC}

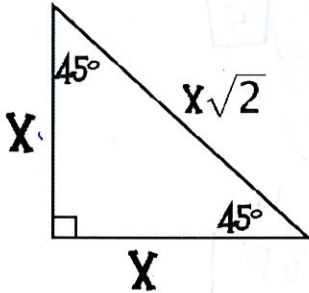
Each of the non-right angles in a right triangle is an acute angle. True!

What is true about the acute angles of a right triangle? Add up to 90° (complimentary)

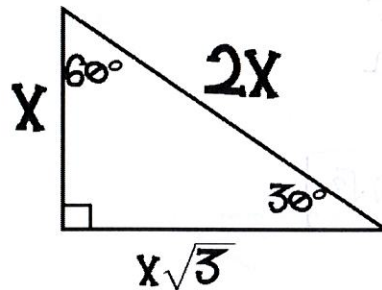
SPECIAL RIGHT TRIANGLES

There are two types of special right triangles.

$45^\circ - 45^\circ - 90^\circ$

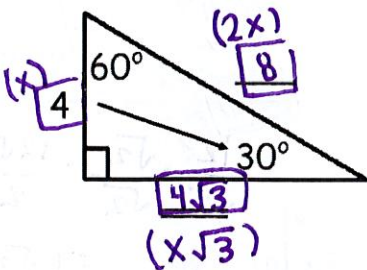


$30^\circ - 60^\circ - 90^\circ$

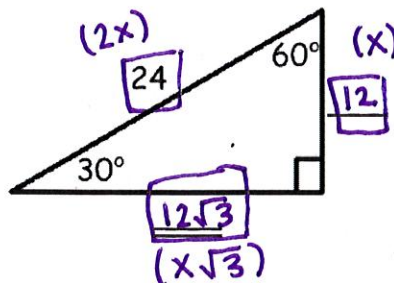


Let's look at 30-60-90 triangles

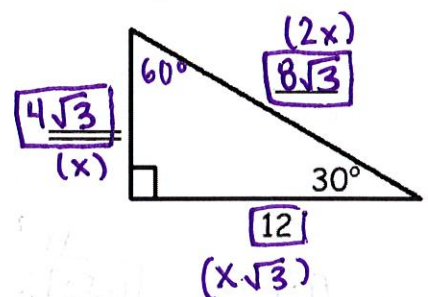
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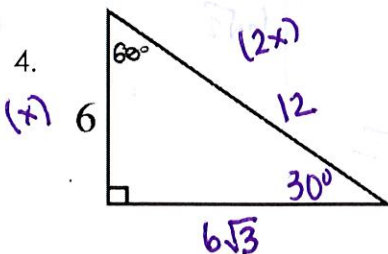
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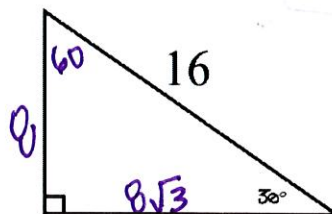
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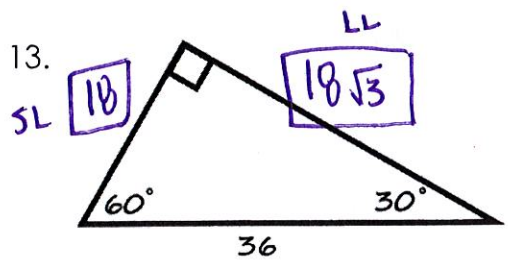
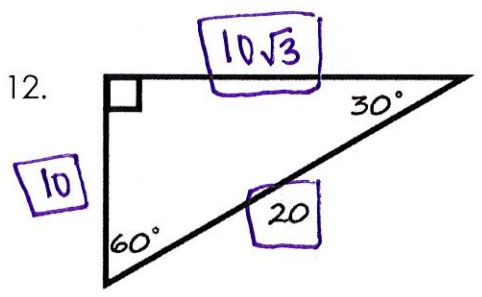
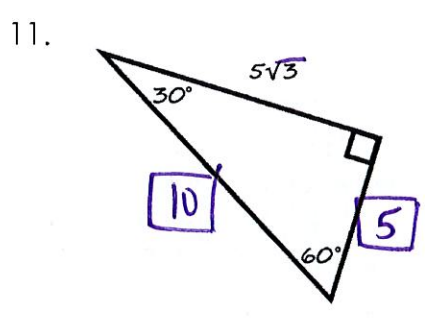
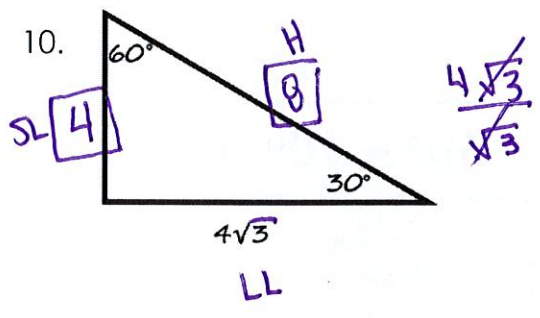
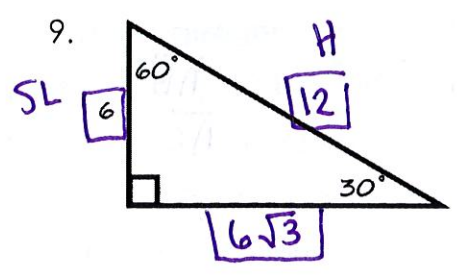
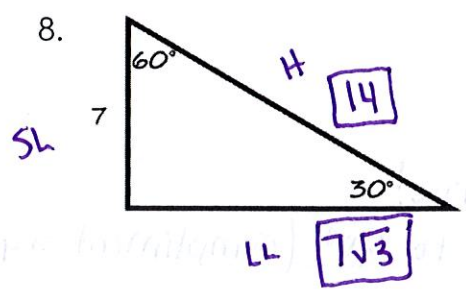
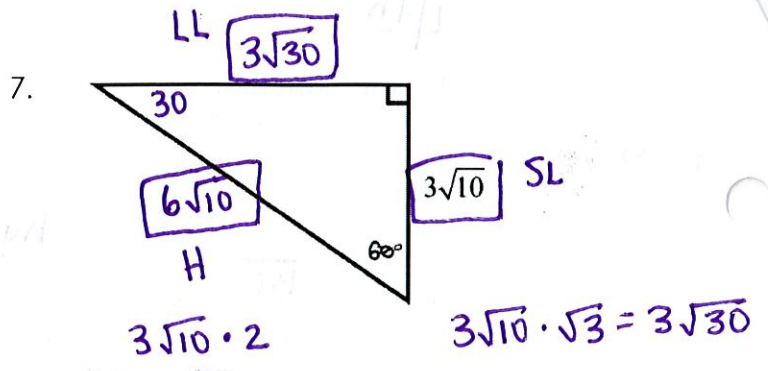
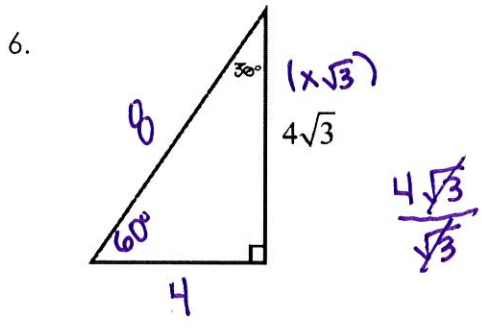
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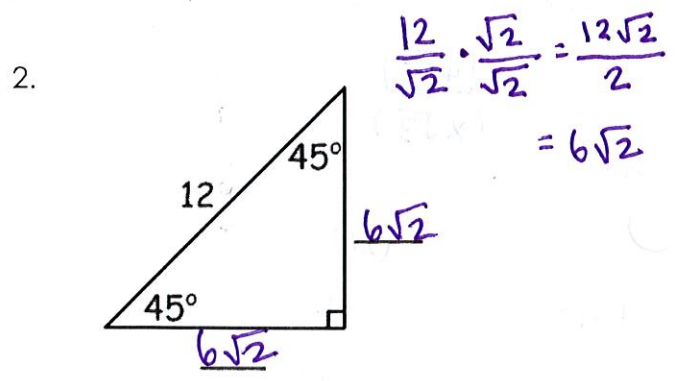
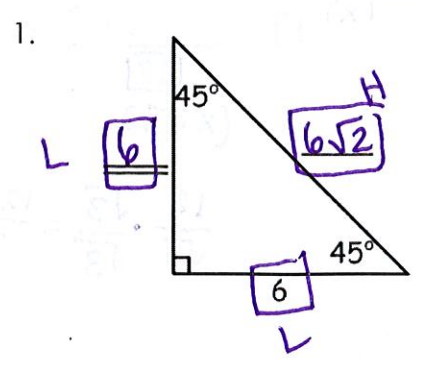
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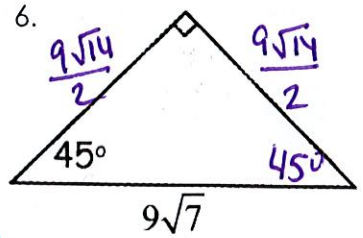
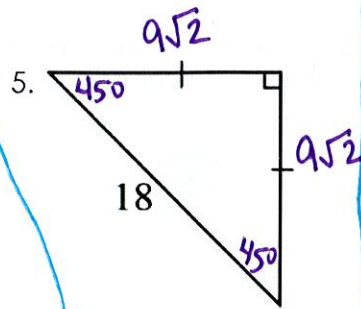
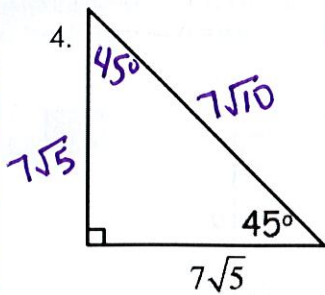
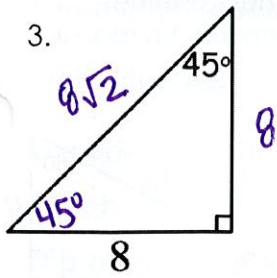


$$\frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{12\sqrt{3}}{3}$$



Now let's look at 45-45-90 triangles





Practice 1: Mix it Up!

$$7\sqrt{5} \cdot \sqrt{2} = 7\sqrt{10}$$

$$\frac{18 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{18\sqrt{2}}{2}$$

$$\frac{9\sqrt{7} \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{9\sqrt{14}}{2}$$

1.

$$\frac{18 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{18\sqrt{2}}{2} = 9\sqrt{2}$$
