

Warm-Up: Radicals

How do you multiply radicals? Leave in radical form unless it is a perfect square!

1. $\sqrt{2} \cdot \sqrt{3}$
 $\sqrt{6}$
2. $\sqrt{6} \cdot \sqrt{8}$
 $\sqrt{48}$
 $\sqrt{16}\sqrt{3}$
 $4\sqrt{3}$
3. $7 \cdot 2\sqrt{10}$
 $14\sqrt{10}$
4. $3\sqrt{3} \cdot \sqrt{5}$
 $3\sqrt{15}$
5. $\sqrt{3} \cdot \sqrt{12}$
 $\sqrt{36}$
6

How do you divide radicals? Leave in radical form unless it is a perfect square! Remember you cannot have a radical in the denominator! ☺

11. $\frac{\sqrt{10}}{\sqrt{5}} = \sqrt{\frac{10}{5}} = \sqrt{2}$
12. $\frac{\sqrt{7}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{35}}{5}$
13. $\frac{\sqrt{6}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}}$
 $\frac{\sqrt{42}}{7}$
14. $\frac{5}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$
 $\frac{5\sqrt{2}}{2}$
15. $\frac{9}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$
 $\frac{9\sqrt{3}}{3} = 3\sqrt{3}$

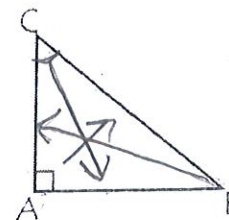
Right Triangles

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.

What is true about the acute angles of a right triangle? The acute angles are complementary (total 90°)

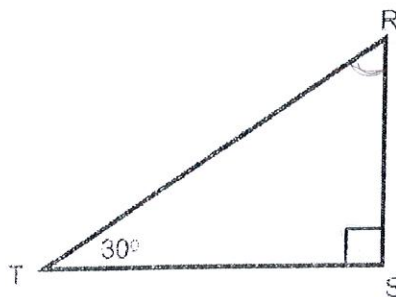
Practice with terminology and angle measures...

1. Find the $m\angle R$. 60°

2. Name the side opposite $\angle R$. \overline{TS}

3. Name the side opposite $\angle T$. \overline{RS}

4. Name the hypotenuse. \overline{TR}



5. Find the $m\angle F$.

45°

6. What kind of triangle is $\triangle DEF$? isosceles right \triangle

7. Name the side opposite $\angle D$.

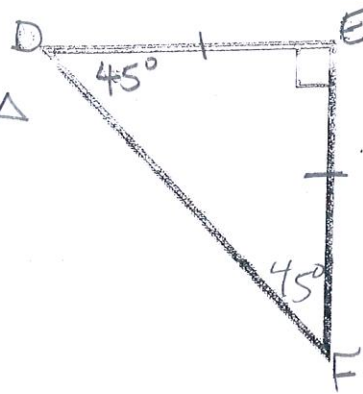
\overline{EF}

8. Name the side opposite $\angle F$.

\overline{DE}

9. Name the hypotenuse.

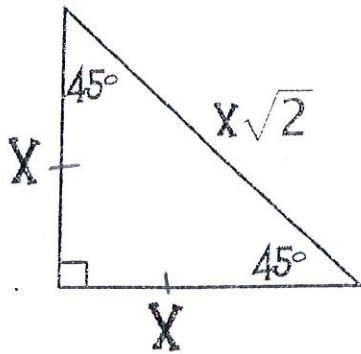
\overline{DF}



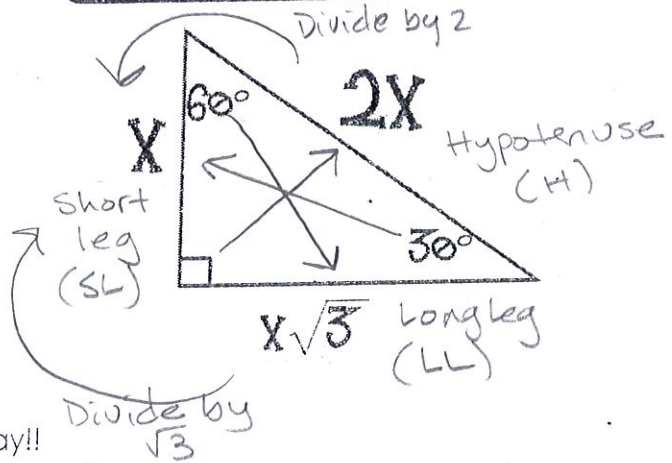
SPECIAL RIGHT TRIANGLES

There are two types of special right triangles: 30°-60°-90° & 45°-45°-90°.

45° - 45° - 90°



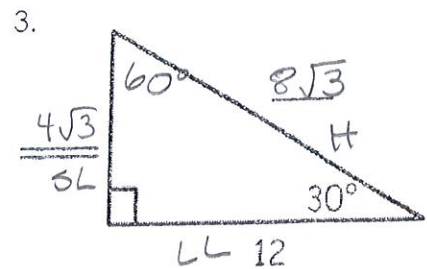
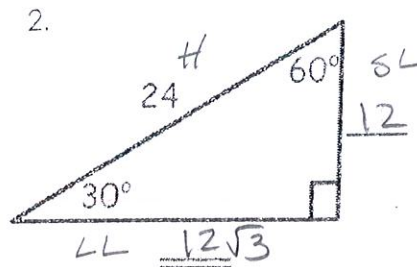
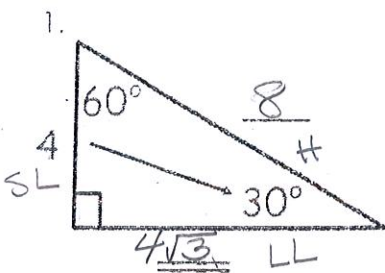
30° - 60° - 90°



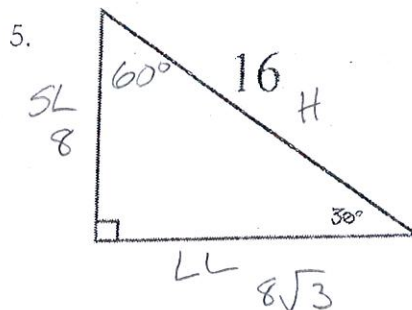
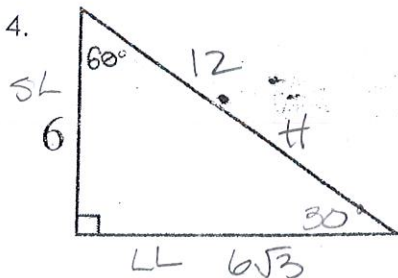
We are just going to look at just 30 - 60 - 90 today!!

- Examples
- Identify SL, LL, H
 - Calculate sides

$$4\sqrt{3}(2) = 8\sqrt{3}$$

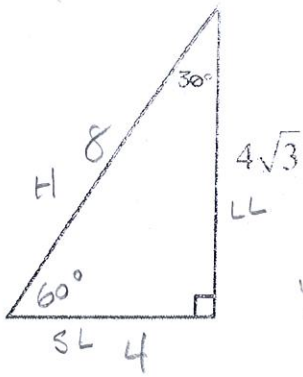


$$\frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3}$$

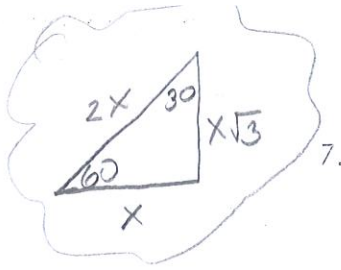


$$3\sqrt{10} \cdot \sqrt{3} = 3\sqrt{30}$$

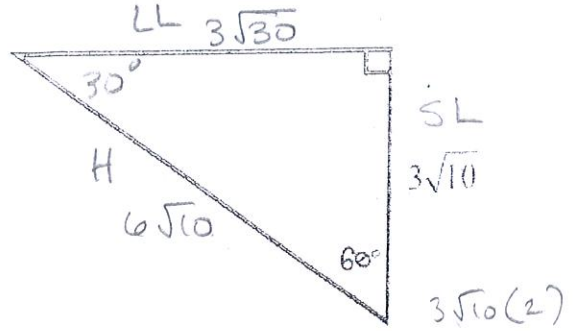
6.



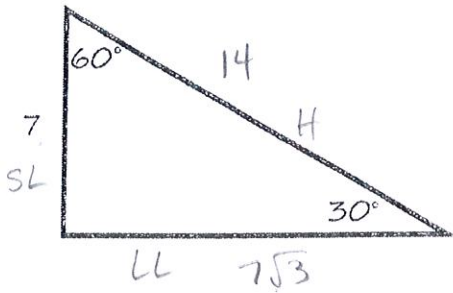
$$\frac{4\sqrt{3}}{\sqrt{3}} = 4$$



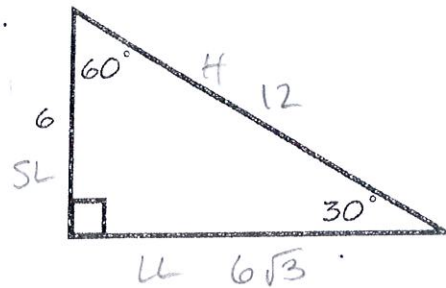
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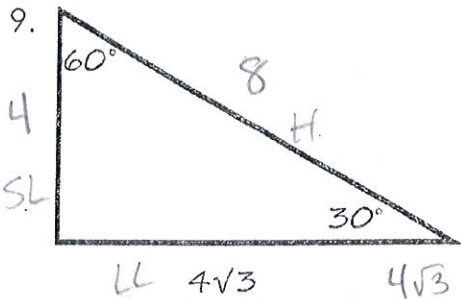
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8.

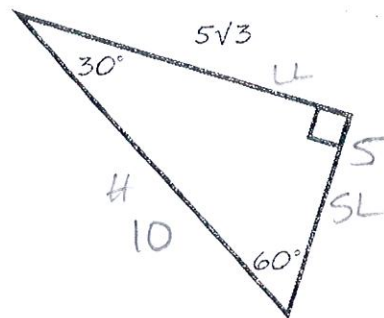


9.



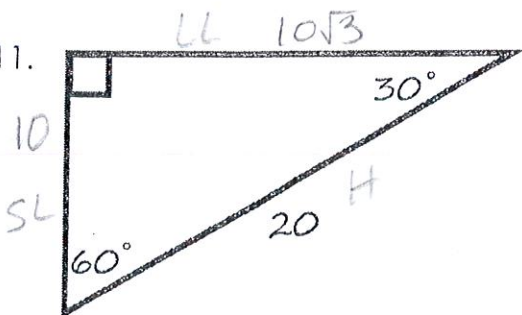
$$\frac{4\sqrt{3}}{\sqrt{3}} = 4$$

10.



$$\frac{5\sqrt{3}}{\sqrt{3}} = 5$$

11.



12.

