Warm Up

1. Find the measure of each angle

\[ x + 48 = 560 \]

\[ 7(x) \times 56° \]

2. Find the sum of all the interior angles in a hexagon.

\[ S = (n-2) \times 180 \]

\[ (6-2) \times 180 \]

\[ 4 \times 180 \]

\[ 720° \]
Pythagorean Theorem
Right Triangle - A triangle with one right angle

Legs of a right triangle - the sides touching the right angle

Hypotenuse - the side not touching the right angle, the diagonal line

Identify the legs and hypotenuse of the following triangles.
The Pythagorean Theorem is...

\[ a^2 + b^2 = c^2 \]

Example 1: Are the following dimensions of a right triangle? 3, 4, 5

\[
\begin{align*}
3^2 + 4^2 &= 5^2 \\
9 + 16 &= 25 \\
25 &= 25
\end{align*}
\]

Yes

Example 2: Are the following dimensions of a right triangle? 5, 6, 7

\[
\begin{align*}
5^2 + 6^2 &= 7^2 \\
25 + 36 &= 49 \\
61 &\neq 49
\end{align*}
\]

No
Identify if the following sides belong to right triangles. (yes or no)

2. 4, 7, 10

   NO

3. 6, 8, 10

   YES
3. 
\[ a^2 + b^2 = c^2 \]
\[ 7^2 + 10^2 = c^2 \]
\[ 49 + 100 = c^2 \]
\[ 149 = c^2 \]
\[ c = 12.2 \]

4. 
\[ a^2 + b^2 = c^2 \]
\[ a^2 + 9.7^2 = 13.3^2 \]
\[ a^2 + 94.09 = 176.89 \]
\[ a^2 = 82.8 \]
\[ a = 9.1 \]

5. 
\[ a^2 + b^2 = c^2 \]
\[ a^2 + 10^2 = c^2 \]
\[ a^2 + 100 = c^2 \]
\[ \sqrt{100} = c \]
\[ c = 10.4 \]
8. \[ s^2 + 2^2 = c^2 \]
\[ 25 + 4 = c^2 \]
\[ 29 = c \]
\[ c = 5.4 \]

9. \[ a^2 + 5.3^2 = 7.2^2 \]
\[ a^2 + 28.09 = 51.84 \]
\[ a^2 = 23.75 \]
\[ a = 4.9 \]