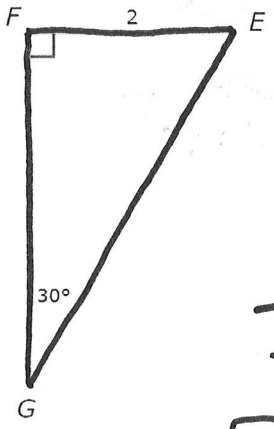
Worked Examples - Solve a Special Right Triangle (IXL Geometry Q.7)

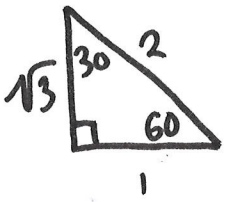
1. Solve the right triangle. Write your answers in simplified, rationalized form. Do not round.



$90 + 30 = 120$

$180 - 120 = 60$

$m\angle E = 60°$



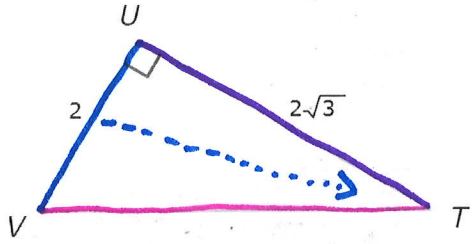
$\frac{2}{1} = \frac{GE}{2}$

$GE = 4$

$\frac{2}{1} = \frac{FG}{\sqrt{3}}$

$FG = 2\sqrt{3}$

2. Solve the right triangle. Write your answers in simplified, rationalized form. Do not round.



$2^2 + (2\sqrt{3})^2 = (VT)^2$

$4 + 12 = (VT)^2$

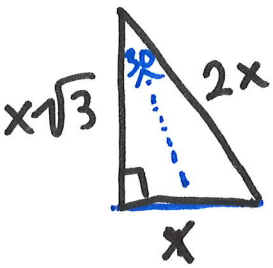
$16 = (VT)^2$

$\sqrt{16} = \sqrt{(VT)^2}$

$4 = VT$

$m\angle T = 30°$

$m\angle V = 60°$

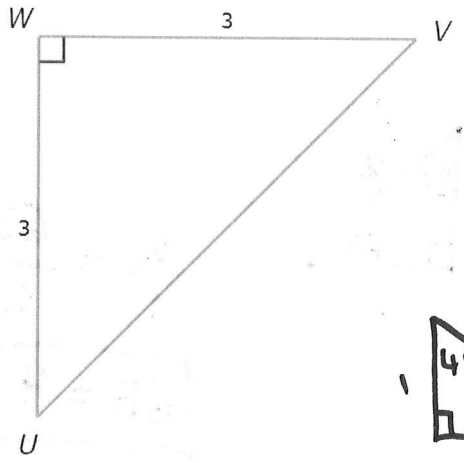


$\frac{2}{1} = \frac{4}{2}$ ✓

$\frac{2\sqrt{3}}{\sqrt{3}} = \frac{2}{1}$ ✓

Proportional sides in a $\triangle$, means $\cong \angle$s.

3. Solve the right triangle. Write your answers in simplified, rationalized form. Do not round.



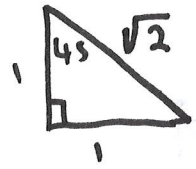
$WV \cong WU$

Isosceles $\triangle$

$m\angle W = 90°$

so

$180 - 90 = 90$



$\frac{90}{2} = 45°$

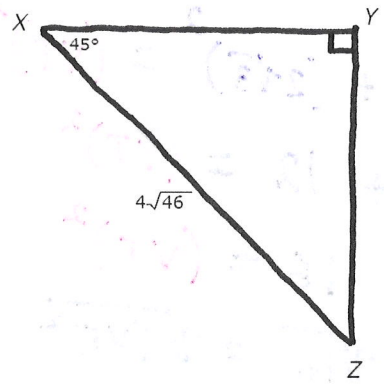
$\frac{UV}{\sqrt{2}} = \frac{3}{1}$

$UV = 3\sqrt{2}$

$m\angle U = 45°$

$m\angle V = 45°$

4. Solve the right triangle. Write your answers in simplified, rationalized form. Do not round.

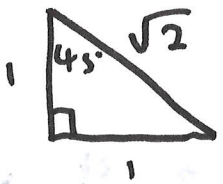


$180 - 90 = 90$

$90 - 45$

$m\angle Z = 45°$ → Isosceles $\triangle$

$m\angle Y = 90°$



$XY \cong ZY$

$\frac{XY}{1} = \frac{4\sqrt{46}}{\sqrt{2}}$

$XY = 4\sqrt{\frac{46}{2}}$

$XY = 4\sqrt{23}$ $\quad ZY = 4\sqrt{23}$