Review of Square Roots and Simplifying Square Roots

1) Solve $a^2 = 64$

2) Simplify $\sqrt{108}$

Review of Square Roots and Simplifying Square Roots

1) Solve $a^2 = 64$

$$\sqrt{a^2} = \sqrt{64}$$

$$a = \pm 8$$

note: if the problem involves measurements, the -8 is omitted

2) Simplify $\sqrt{108}$

$$\sqrt{36}\,\sqrt{3}$$

$$6\sqrt{3}$$

or

$$\sqrt{9}\,\sqrt{12}$$

$$\sqrt{4}\,\sqrt{3}$$

$$3 \cdot 2 \cdot \sqrt{3}$$

$$6\sqrt{3}$$

Review of Square Roots and Simplifying Square Roots

3) Simplify $\sqrt{\frac{9}{49}}$

4) Simplify $\sqrt{\frac{200}{x^2}}$

Review of Square Roots and Simplifying Square Roots

3) Simplify $\sqrt{\frac{9}{49}}$

$$\frac{\sqrt{9}}{\sqrt{49}}$$

$$\frac{3}{7}$$

4) Simplify $\sqrt{\frac{200}{x^2}}$

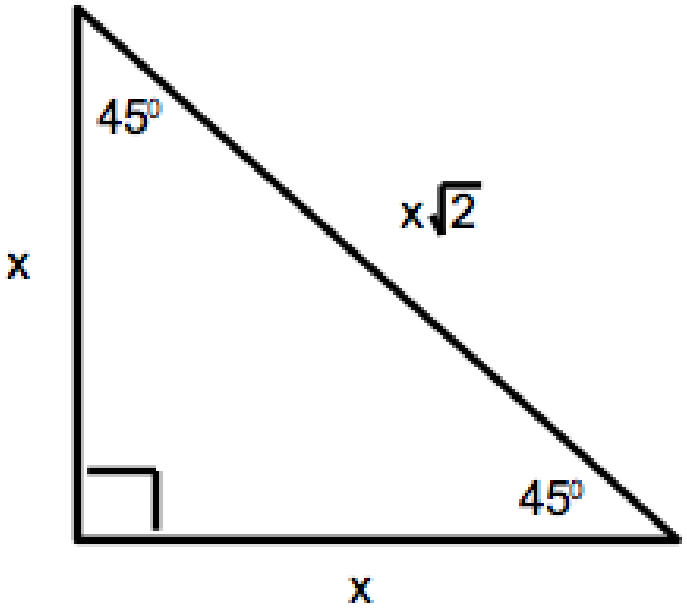
$$\frac{\sqrt{200}}{\sqrt{x^2}}$$

$$\frac{\sqrt{100} \cdot \sqrt{2}}{x}$$

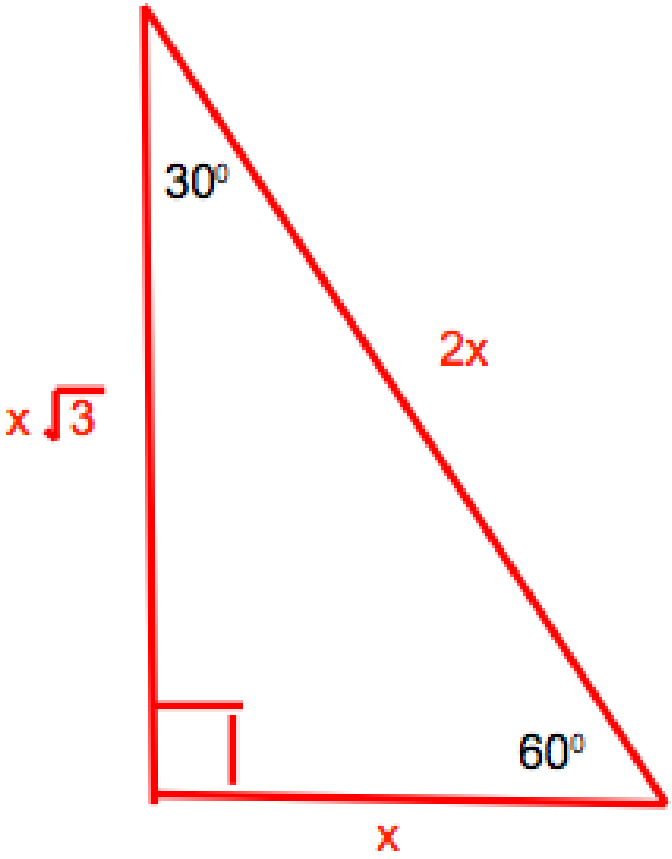
$$\frac{10\sqrt{2}}{x}$$

Special Types of Right Triangles

These two types of right triangles have specific measurements for their legs and hypotenuse based on the angles.



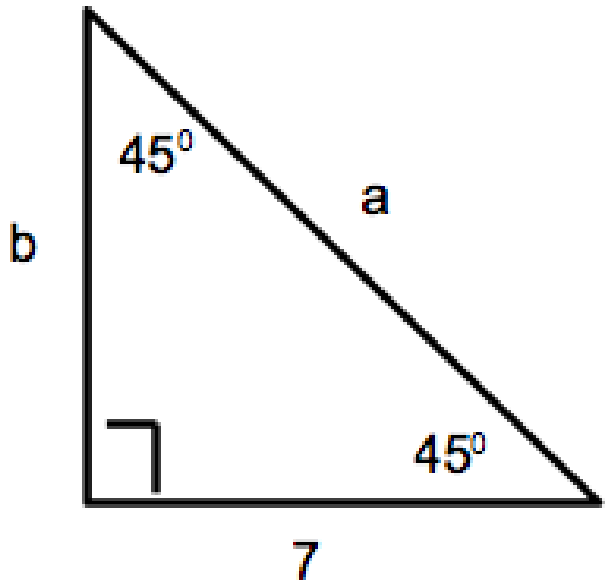
$45^0 - 45^0 - 90^0$ Triangle



$30^0 - 60^0 - 90^0$ Triangle

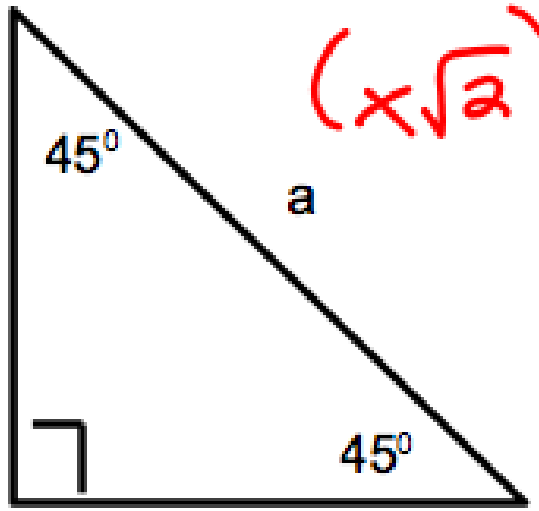
Find the unknown lengths on each triangle. Leave in simplified radical form.

1)



Find the unknown lengths on each triangle. Leave in simplified radical form.

1)



(x)

(x√2)

(x)

$x = 7$

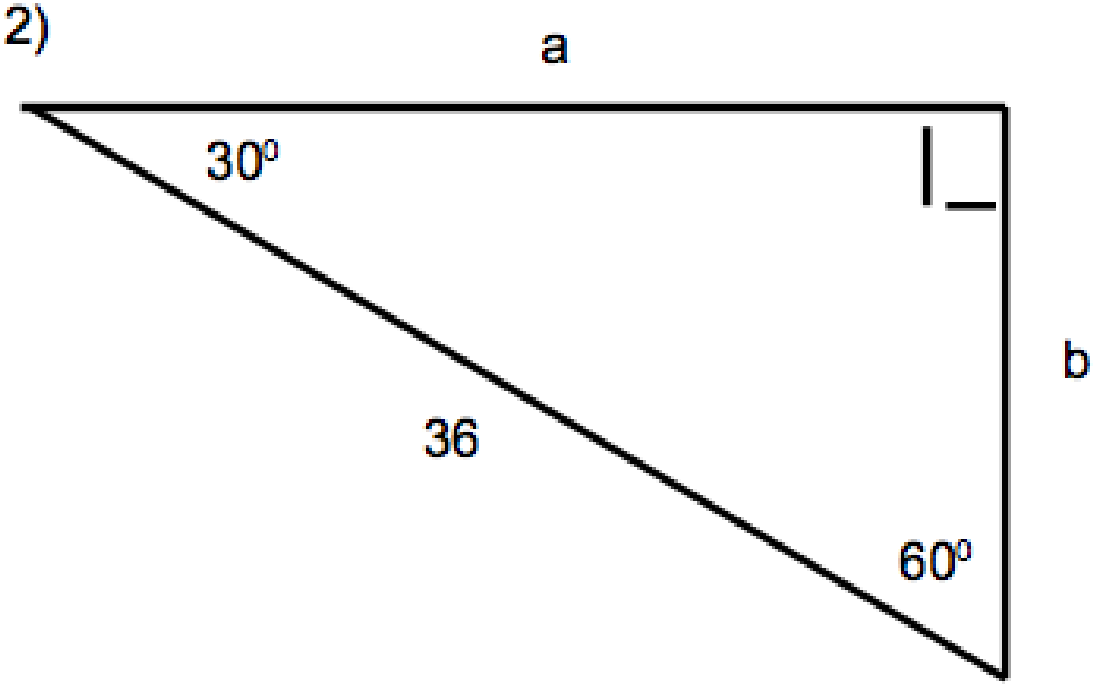
therefore

$b = x = 7$

$a = x\sqrt{2} = 7\sqrt{2}$

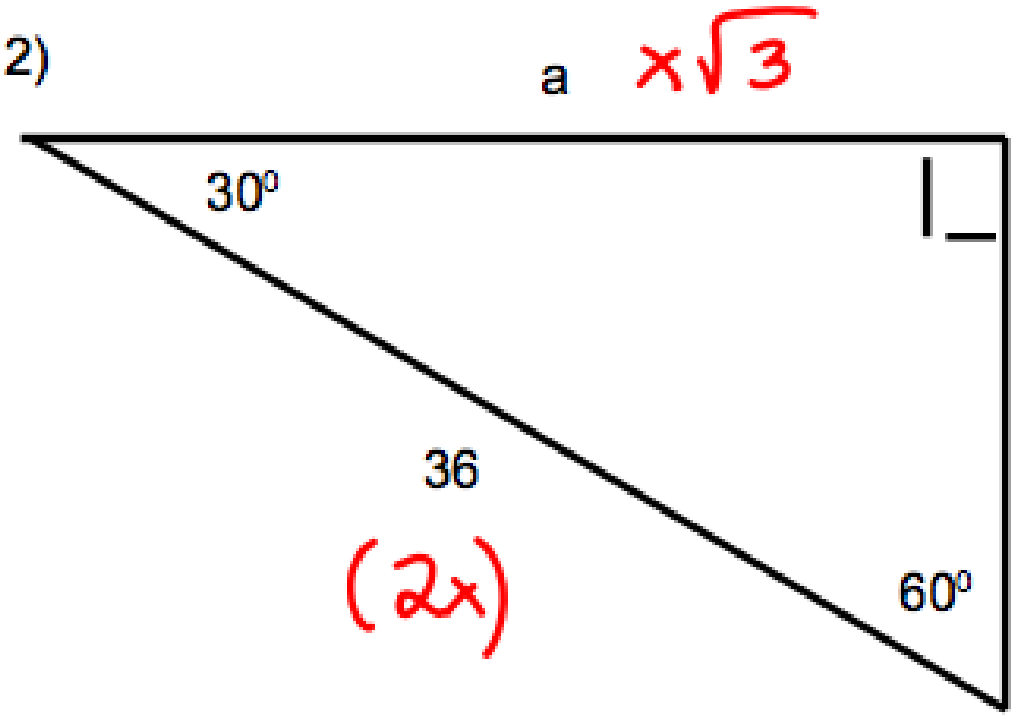
Find the unknown lengths on each triangle. Leave in simplified radical form.

2)



Find the unknown lengths on each triangle. Leave in simplified radical form.

2)



Since

$2x = 36$

$x = 18$

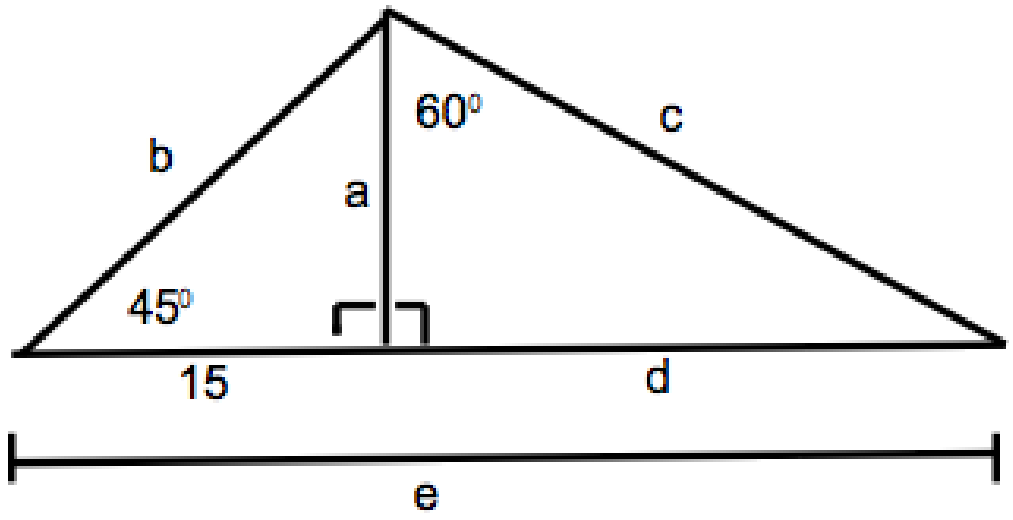
Therefore

$a = x\sqrt{3} = 18\sqrt{3}$

$b = x = 18$

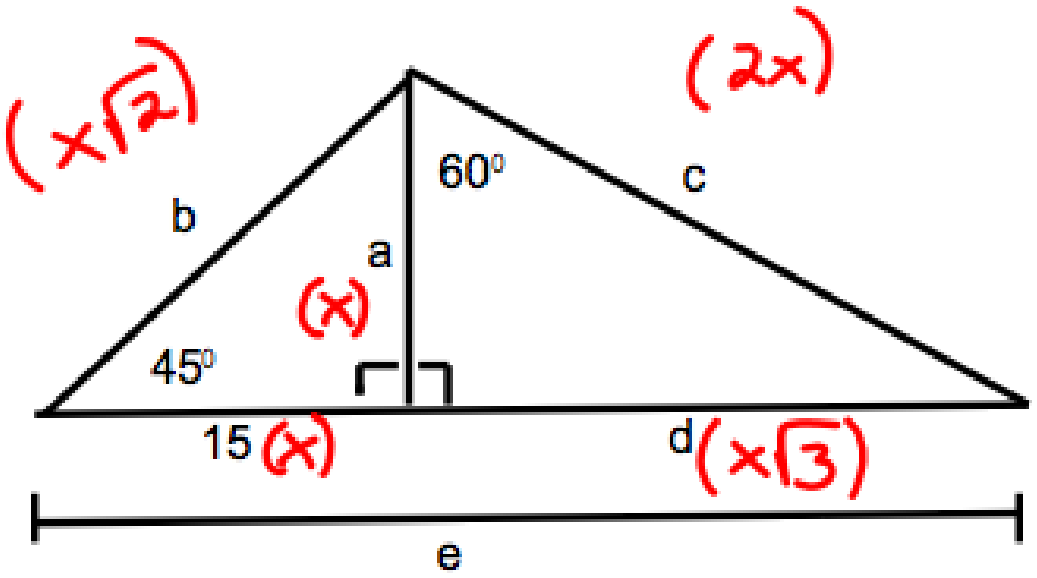
Find the unknown lengths on each triangle. Leave in simplified radical form.

3)



Find the unknown lengths on each triangle. Leave in simplified radical form.

3)



Since $x = 15$,

then $a = x = 15$

$b = x\sqrt{2} = 15\sqrt{2}$

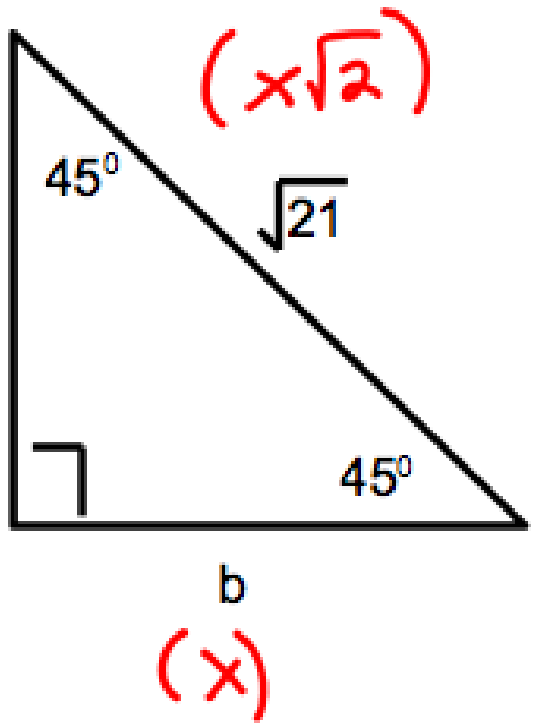
$c = 2x = 30$

$d = x\sqrt{3} = 15\sqrt{3}$

$e = 15 + d = 15 + 15\sqrt{3}$

Find the unknown lengths on each triangle. Leave in simplified radical form.

4)



Since $x\sqrt{2} = \sqrt{21}$

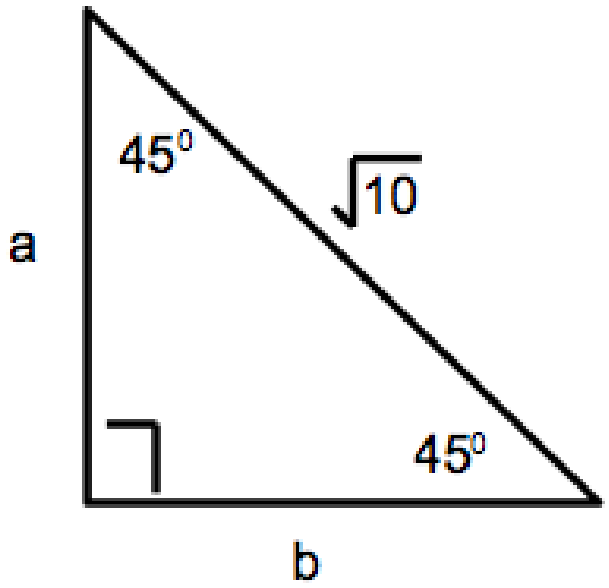
$$\frac{x\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{21}}{\sqrt{2}}$$

$$x = \frac{\sqrt{21} \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$$

$$x = \frac{\sqrt{42}}{2}$$

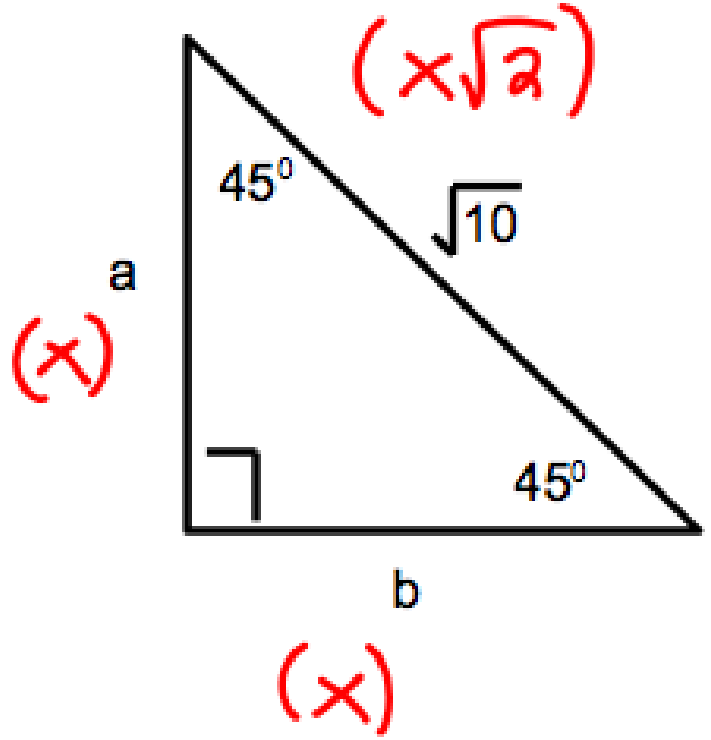
Find the unknown lengths on each triangle. Leave in simplified radical form.

5)



Find the unknown lengths on each triangle. Leave in simplified radical form.

5)



Since $x\sqrt{2} = \sqrt{10}$

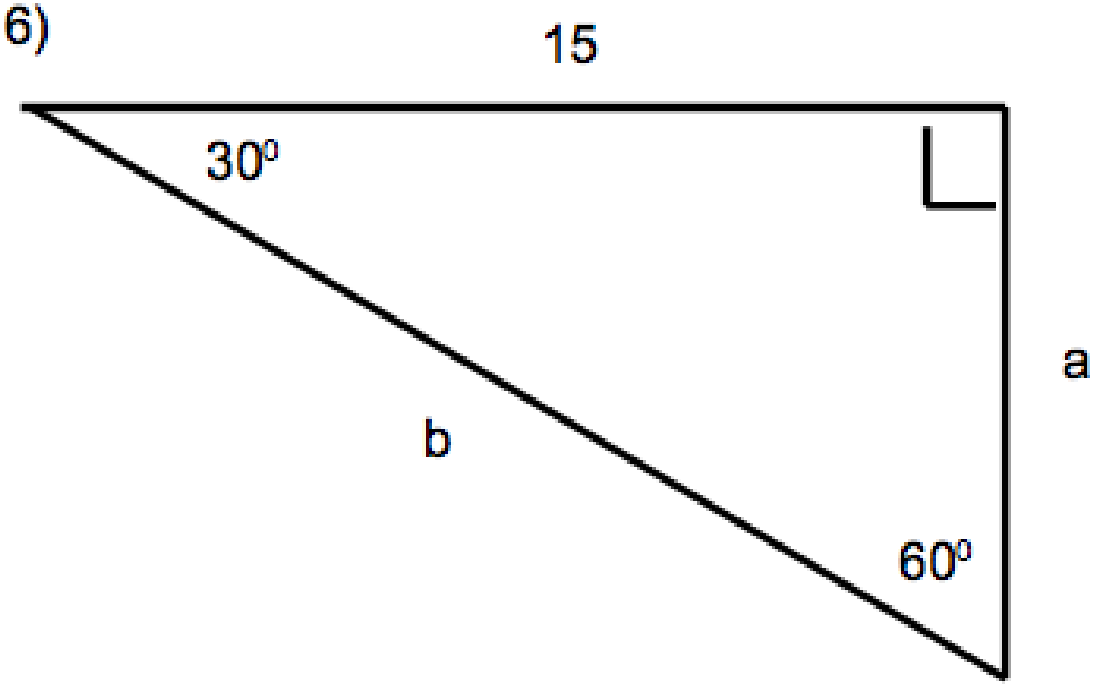
$$\frac{x\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{10}}{\sqrt{2}}$$

$$\frac{\sqrt{10}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{20}}{2}$$

$$\frac{\sqrt{4}\cdot\sqrt{5}}{2} = \frac{2\sqrt{5}}{2}$$

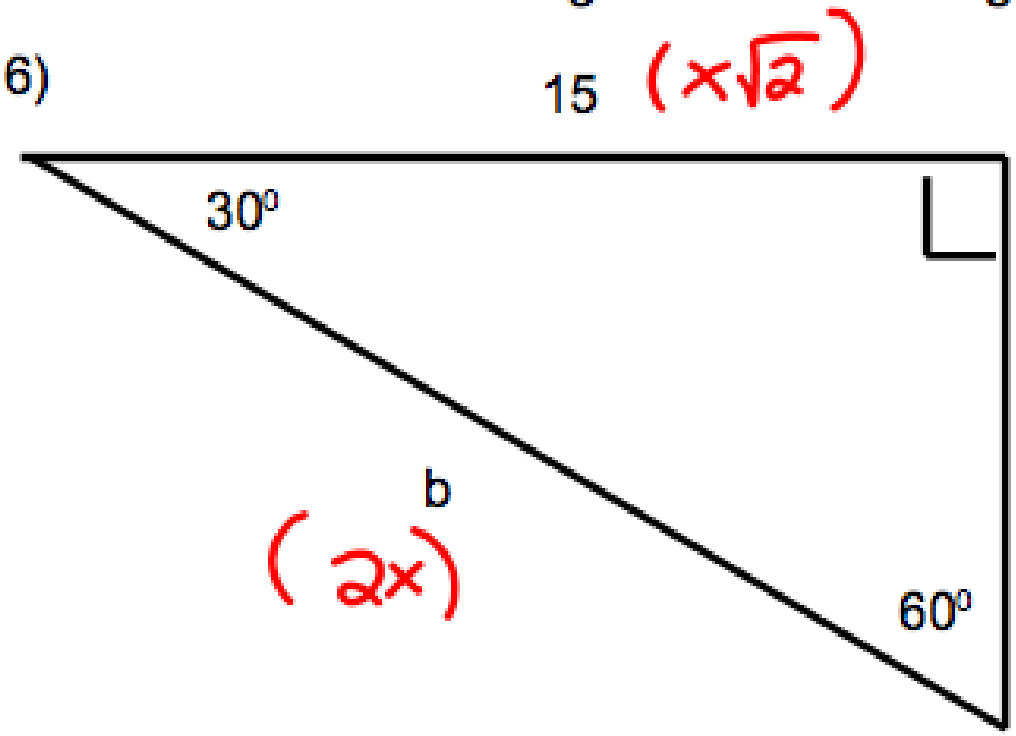
Find the unknown lengths on each triangle. Leave in simplified radical form.

6)



Find the unknown lengths on each triangle. Leave in simplified radical form.

6)



$a = x = 5\sqrt{3}$

$b = 2x = 10\sqrt{3}$

$x\sqrt{3} = 15$

$\frac{x\sqrt{3}}{\sqrt{3}} = \frac{15}{\sqrt{3}}$

$x = \frac{15}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$

$\frac{15\sqrt{3}}{3}$

$5\sqrt{3}$