

Geometry Warm Up 4/30/14

Simplify: Write in simplest radical form.

① $\sqrt{72}$

$$\sqrt{9} \cdot \sqrt{8}$$

$$3 \cdot \sqrt{4} \cdot \sqrt{2}$$

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

$$6\sqrt{2}$$

③ $\sqrt{50}$

$$\sqrt{25} \sqrt{2}$$

$$5\sqrt{2}$$

② $\sqrt{56}$

$$\sqrt{8} \cdot \sqrt{7}$$

$$\sqrt{2} \cdot \sqrt{4}$$

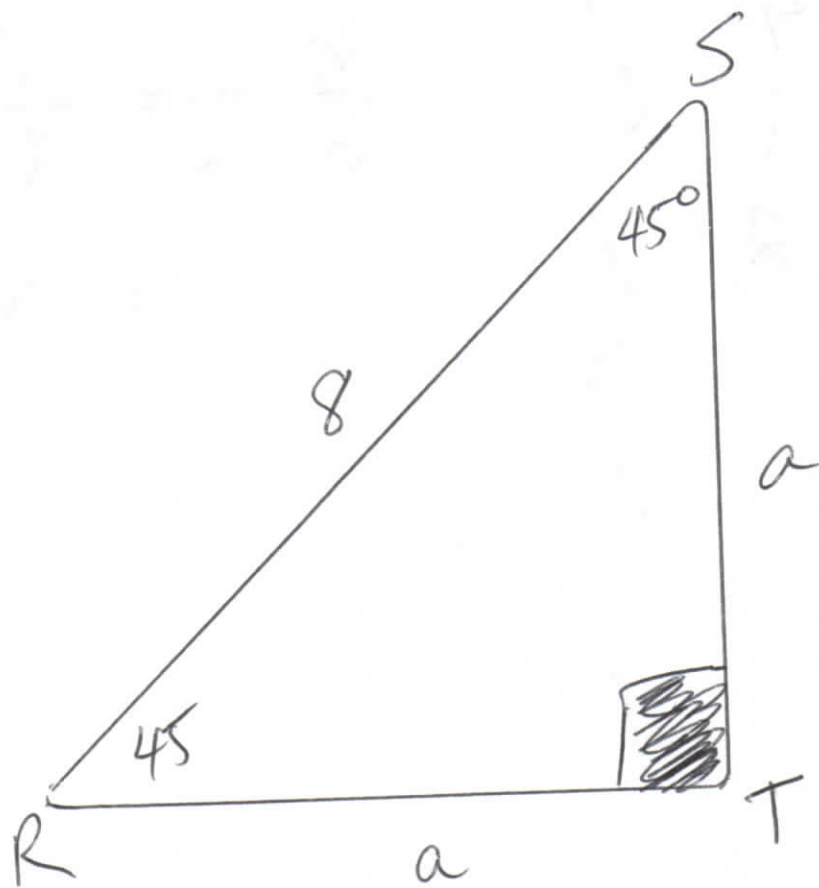
$$2 \cdot \sqrt{2} \cdot \sqrt{7}$$

$$2\sqrt{14}$$

④ $\sqrt{28}$

$$\sqrt{4} \sqrt{7}$$

$$2\sqrt{7}$$



Approach #1

$\frac{8}{\sqrt{2}}$ rationalize the denominator

$$\frac{8}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{8\sqrt{2}}{2}$$

$$a = 4\sqrt{2}$$

Approach #2

$$a^2 + a^2 = 8^2$$

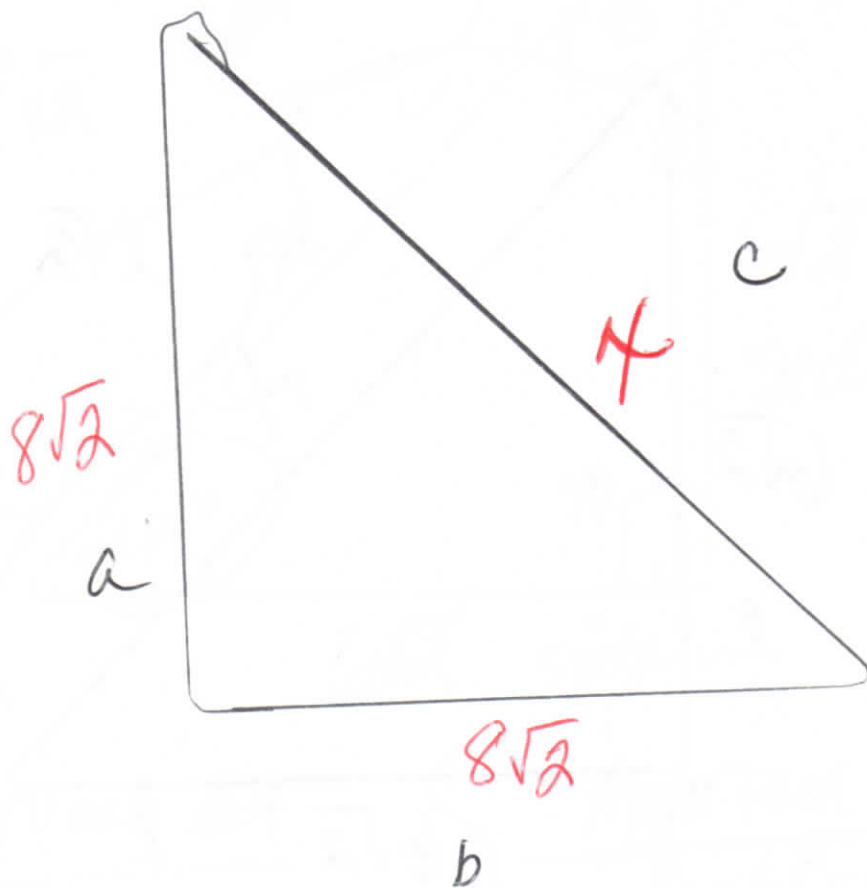
$$\frac{2a^2}{2} = \frac{64}{2}$$

$$a^2 = 32 \rightarrow \frac{32}{8, 4}$$

$$a = \sqrt{32} \rightarrow \frac{2, 16}{1, 32}$$

$$a = \sqrt{16}\sqrt{2}$$

$$a = 4\sqrt{2}$$



$$a^2 + b^2 = c^2$$

$$(8\sqrt{2})^2 + (8\sqrt{2})^2 = x^2$$

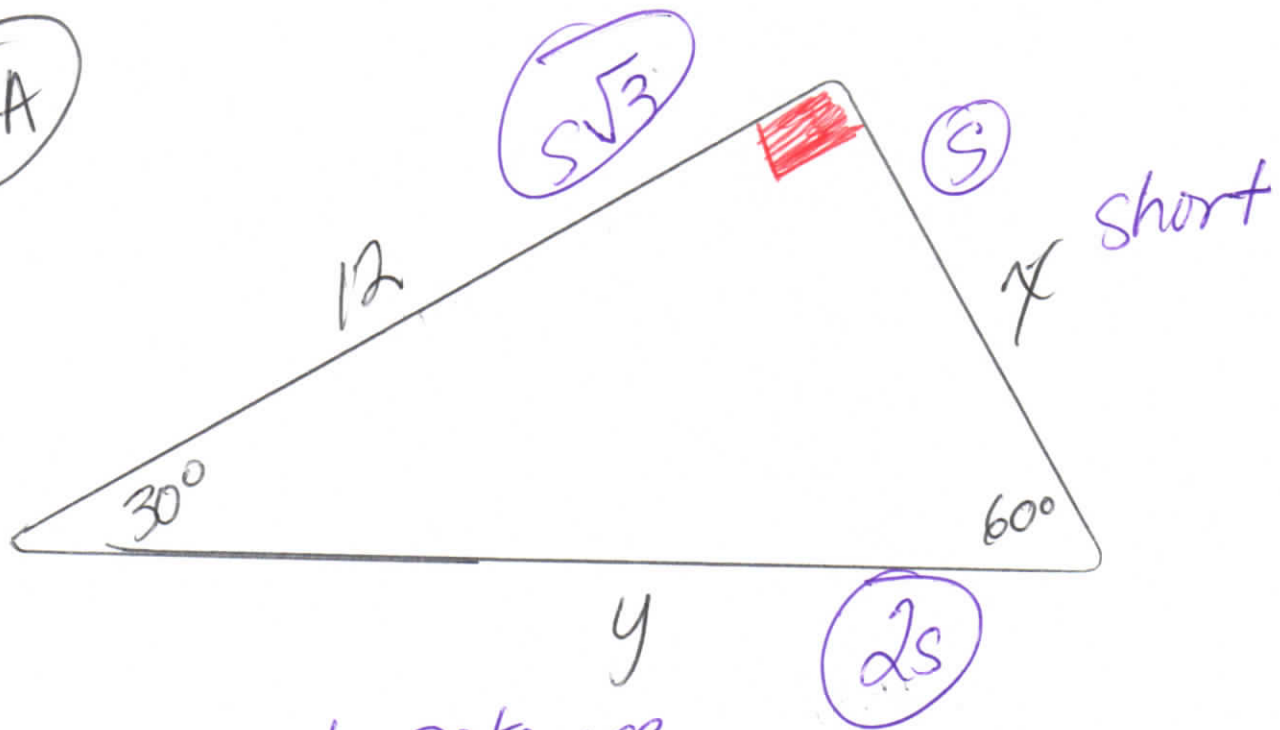
$$16 = x$$

$$(64 \cdot 2) + (64 \cdot 2) = x^2$$

$$\sqrt{256} = \sqrt{x^2}$$

$$16 = x$$

3A



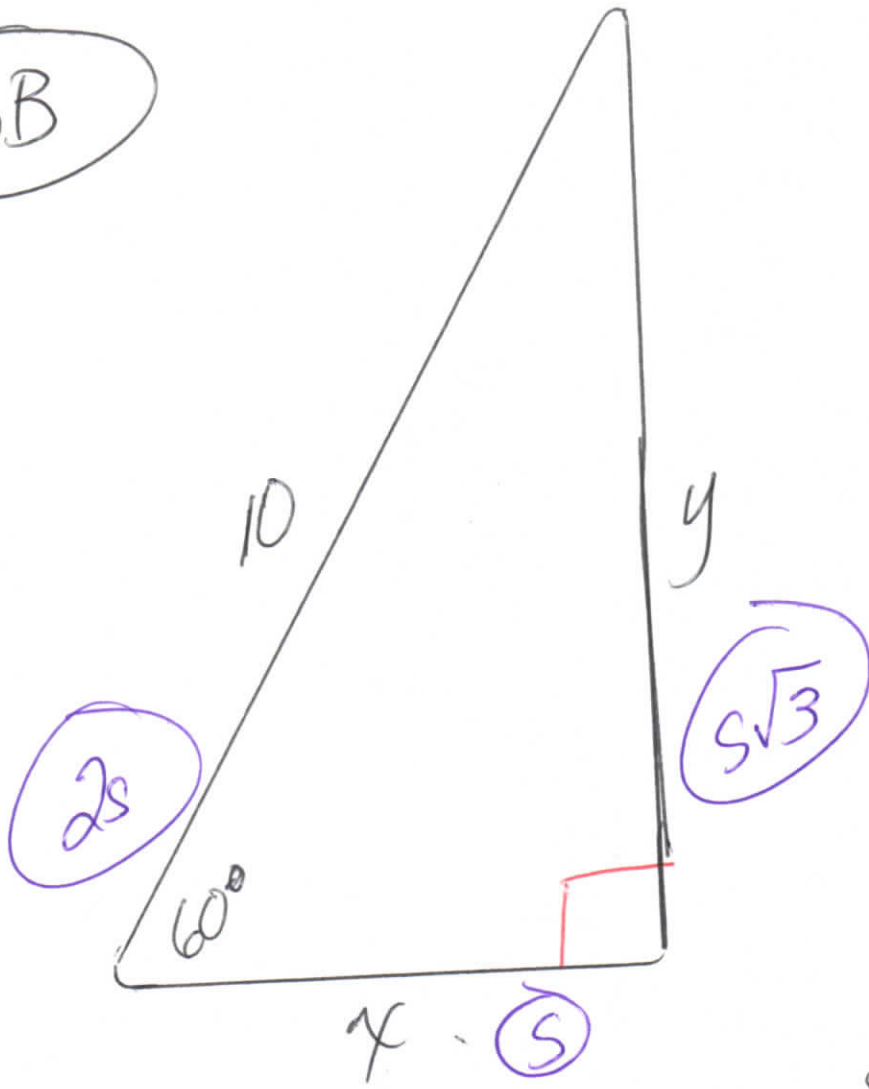
hypotenuse

rationalize
the denominator

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

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

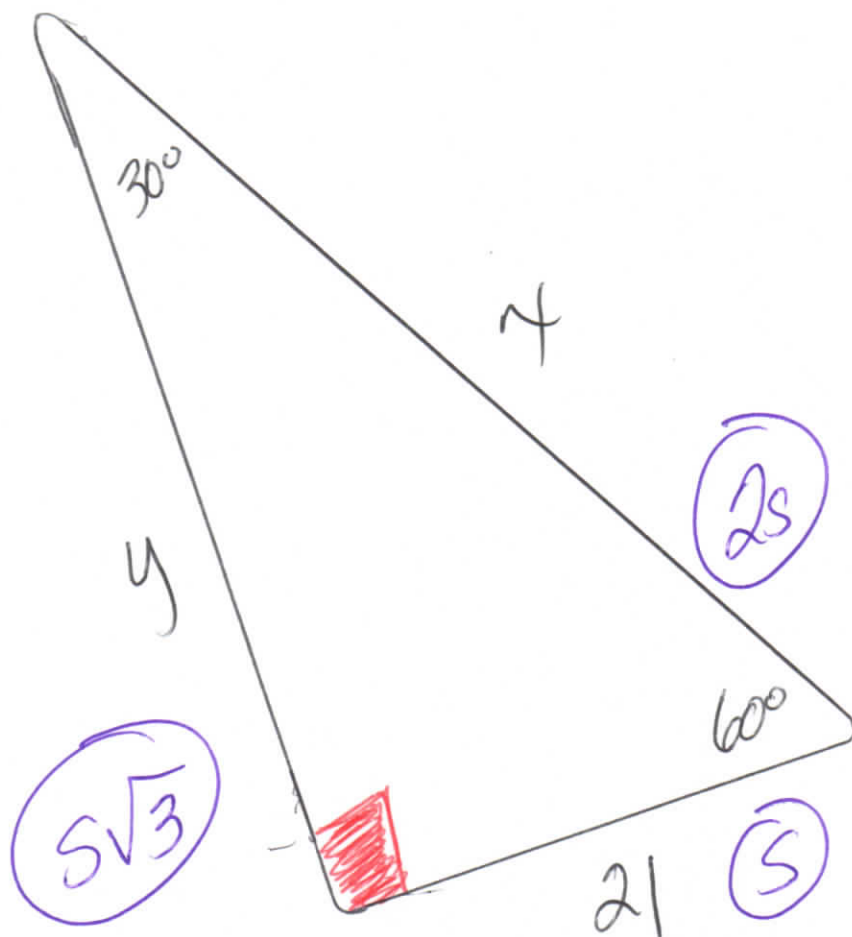
3B



$$x = \frac{10}{2} = \boxed{5}$$

$$y = \boxed{5\sqrt{3}}$$

30



$$x = 2s = 2(21) = 42$$

$$y = \cancel{s} \sqrt{3} = \boxed{21\sqrt{3}}$$

BC

AB = short side 4.

AC = med side $4\sqrt{3}$ $\sqrt{3}$

BC = hypotenuse $2(4) = 8$
↑
short side