

4.3 Check for Understanding

Name _____

Rewrite each of the following in simplest radical form. Reduce all fractions completely!

1) $\sqrt{98} = \underline{7\sqrt{2}}$

2) $3\sqrt{80} = \underline{12\sqrt{5}}$

3) $(4\sqrt{7})(5\sqrt{12}) = \underline{40\sqrt{21}}$
 $20\sqrt{84}$
 $20\sqrt{4}\sqrt{21}$
 $40\sqrt{21}$

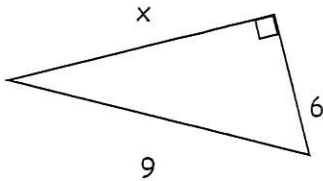
4) $\frac{4}{3\sqrt{10}} = \underline{\frac{4\sqrt{10}}{30}}$
 $\frac{2\sqrt{10}}{15}$

5) $\sqrt{\frac{5}{8}} = \underline{\frac{\sqrt{5}}{2\sqrt{2}}}$
 $\frac{\sqrt{10}}{4}$

6) $\frac{\sqrt{3}}{\sqrt{15}} = \underline{\frac{1}{\sqrt{5}}}$
 $\frac{\sqrt{5}}{5}$

Find the missing side of the triangle. Be sure answer is in simplest radical form.

7)



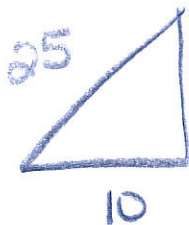
$$6^2 + x^2 = 9^2$$

$$36 + x^2 = 81$$

$$x^2 = 49$$

$$\underline{x = 7}$$

8) How high up on a building will a 25-foot ladder reach if the foot of the ladder is placed 10 feet from the building? Be sure answer is in simplest radical form.



$$x^2 + 10^2 = 25^2$$

$$x^2 = 525$$

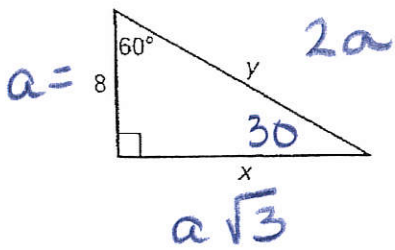
$$x = \sqrt{525}$$

$$x = 5\sqrt{21}$$

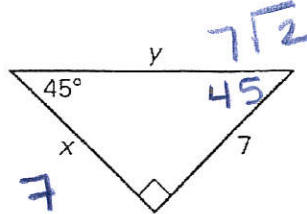
$$\underline{22.9 \text{ ft}}$$

Find the length of all the missing sides in each triangle. Express all answers in simplest radical form.

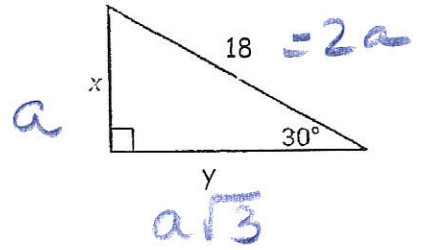
9) $x = 8\sqrt{3}$ $y = 16$



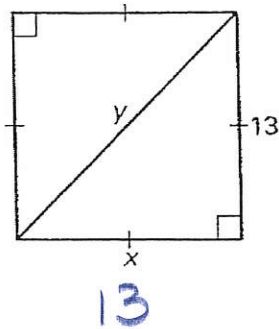
10) $x = 7$ $y = 7\sqrt{2}$



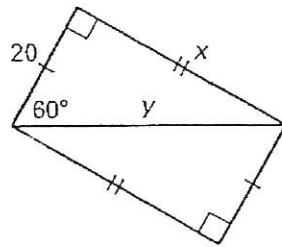
11) $x = 9$ $y = 9\sqrt{3}$



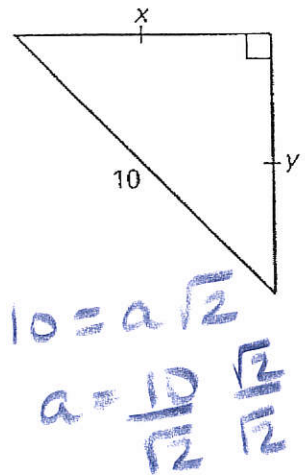
12) $x = 13$ $y = 13\sqrt{2}$



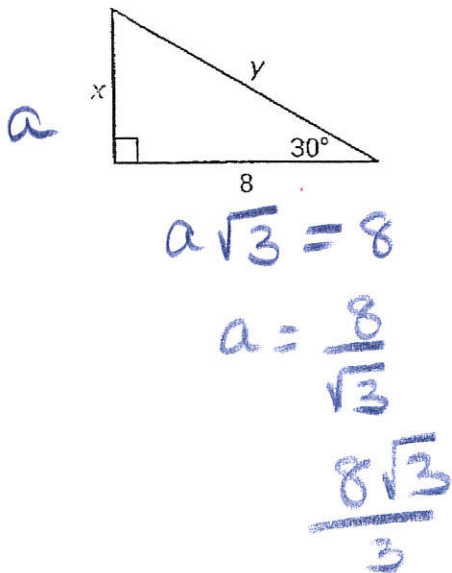
13) $x = 20\sqrt{3}$ $y = 40$



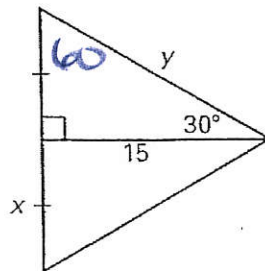
14) $x = 5\sqrt{2}$ $y = 5\sqrt{2}$



15) $x = \frac{8\sqrt{3}}{3}$ $y = \frac{16\sqrt{3}}{3}$



16) $x = 5\sqrt{3}$ $y = 10\sqrt{3}$



Handwritten calculations:
 $15 = a\sqrt{3}$
 $\frac{15\sqrt{3}}{3} = a$
 $5\sqrt{3} = a$
 $y = 10\sqrt{3}$