Unit 4 Review

Name Key ID:

Radicals & Special Right Triangles

Date Period

Simplify.

1) $\sqrt{8} \cdot \sqrt{2} = \sqrt{16} = 4$

2) $\sqrt{5} \cdot \sqrt{5} = 5$

3) $\sqrt{3} \cdot -5\sqrt{2} = -5\sqrt{6}$

4) $\sqrt{5} \cdot -3\sqrt{5} = -3 \cdot 5 = -15$

5) $\frac{\sqrt{4}}{\sqrt{25}} = \frac{2}{5}$

6) $\frac{\sqrt{6}}{\sqrt{2}} = \sqrt{\frac{6}{2}} = \sqrt{3}$

7) $\frac{\sqrt{12}}{\sqrt{100}} = \frac{\sqrt{4 \cdot 3}}{10} = \frac{2\sqrt{3}}{10} = \boxed{\frac{\sqrt{3}}{5}}$

8) $\frac{\sqrt{16}}{3\sqrt{4}} = \frac{1}{3} \cdot \sqrt{\frac{16}{4}}$

$= \frac{1}{3}\sqrt{4}$

$= \boxed{\frac{2}{3}}$

9) $\sqrt{50} = \sqrt{25 \cdot 2}$

$= 5\sqrt{2}$

10) $\sqrt{12} = \sqrt{4 \cdot 3}$

$= 2\sqrt{3}$

11) $\sqrt{20} = \sqrt{4 \cdot 5}$

$= 2\sqrt{5}$

12) $\sqrt{63} = \sqrt{9 \cdot 7}$

$= 3\sqrt{7}$

13) $\sqrt{192} = \sqrt{64 \cdot 3}$

$= 8\sqrt{3}$

14) $\sqrt{48} = \sqrt{16 \cdot 3}$

$= 4\sqrt{3}$

9) $5\sqrt{2}$
13) $8\sqrt{3}$
10) $2\sqrt{3}$
14) $4\sqrt{3}$

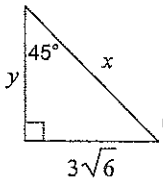
4) -15
8) $\frac{2}{3}$

3) $-5\sqrt{6}$
7) $\frac{\sqrt{3}}{5}$

CHECK YOUR WORK!
1) 4
2) 5
5) $\frac{2}{5}$
6) $\sqrt{3}$

Find the missing side lengths. Leave your answers as radicals in simplest form.

15) $3\sqrt{6}$



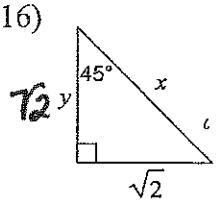
$x = 3\sqrt{6}\cdot\sqrt{2}$

$x = 3\sqrt{12}$

$x = 3\sqrt{4\cdot 3}$

$\boxed{x = 6\sqrt{3}}$

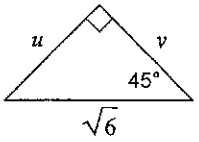
16) $\sqrt{2}$



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

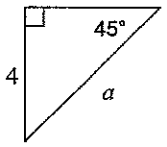
$\boxed{x = 2}$

17)



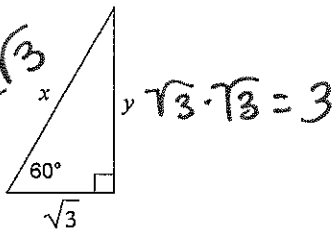
$u = v = \frac{\sqrt{6}}{\sqrt{3}} = \sqrt{2}$

18) 4 b



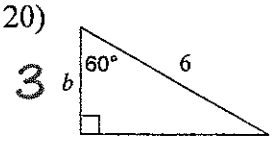
$a = 4\sqrt{2}$

19) $2\sqrt{3}$



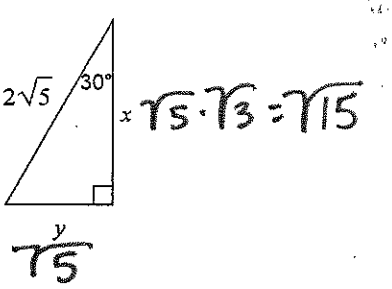
$\sqrt{3}\cdot\sqrt{3} = 3$

20) 3 b



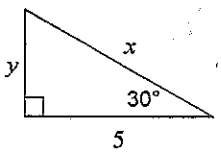
$3\sqrt{3}$

21)



$\sqrt{5}\cdot\sqrt{3} = \sqrt{15}$

22)

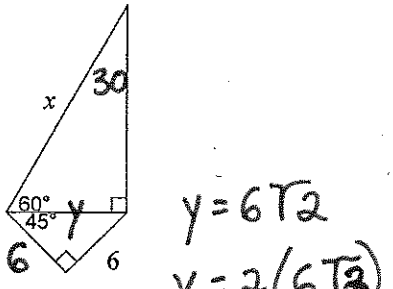


$y = \frac{5}{\sqrt{3}}$ $x = \frac{10}{\sqrt{3}}$

OR $y = \frac{5}{\sqrt{3}}\left(\frac{\sqrt{3}}{\sqrt{3}}\right) = \frac{5\sqrt{3}}{3}$

$x = \frac{10\sqrt{3}}{3}$

23)

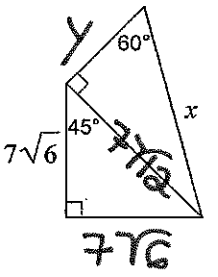


$y = 6\sqrt{2}$

$x = 2(6\sqrt{2})$

$x = 12\sqrt{2}$

24)



$y = \frac{7\sqrt{12}}{\sqrt{3}} = 7\sqrt{4} = 7\cdot 2$

$= \boxed{14}$

$x = 2(14) = \boxed{28}$

CHECK YOUR WORK:

16) $x = 2,\ y = \sqrt{2}$

17) $u = \sqrt{3},\ v = \sqrt{3}$

20) $a = 3\sqrt{3},\ b = 3$

21) $x = \sqrt{15},\ y = \sqrt{5}$

23) $12\sqrt{2}$

24) 28

11) $2\sqrt{5}$

12) $3\sqrt{7}$

15) $x = 6\sqrt{3},\ y = 3\sqrt{6}$

18) $a = 4\sqrt{2},\ b = 4$

19) $x = 2\sqrt{3},\ y = 3$

22) $x = \frac{10\sqrt{3}}{3},\ y = \frac{5\sqrt{3}}{3}$