Questions on Special Right Triangles Worksheet?

Find the missing side lengths. Leave your answers as radicals

7) $u = 3\sqrt{6}$

45°

$3\sqrt{3} = v$　　$3\sqrt{3}$

8) $6\sqrt{2}$

45°

$n = \dfrac{6\sqrt{2}}{\sqrt{2}} = 6$

9)

y

$\dfrac{5\sqrt{2}}{2}$

x　　45°

10)

4　　x

45°

y

11)

45°　　$m = 2\sqrt{6} \cdot \sqrt{2} = 2\sqrt{12} = 2\sqrt{4}\cdot\sqrt{3}$

$2\sqrt{6} = n$　　$= 2 \cdot 2 \cdot \sqrt{3} = 4\sqrt{3}$

$2\sqrt{6}$

$4\sqrt{2} = x$

12)

4

45°

$y = 4$

side length → hypotenuse $\cdot \sqrt{2}$

hypotenuse → side length ÷ by $\sqrt{2}$

shorter leg → hypotenuse
            • by 2

hypotenuse → shorter leg
            ÷ by 2

shorter leg → longer leg
            • by $\sqrt{3}$

longer leg → shorter leg
            ÷ by $\sqrt{3}$

30°
$6\sqrt{3}$

b

21)

$\sqrt{3}\cdot\sqrt{3} = m$
$= \sqrt{9}$
$= 3$

$n = \dfrac{2\sqrt{3}}{2} = \sqrt{3}$

$m = 3$
$n = \sqrt{3}$

30°   60°
$2\sqrt{3}$

22)

$y = \dfrac{5}{2}\cdot\dfrac{\sqrt{3}}{1} = \dfrac{5\sqrt{3}}{2}$

$x = \dfrac{5}{2}\cdot\dfrac{2}{1} = 5$

60° $\dfrac{5}{2}$

x

23)

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

60°
12

24)

x
60°
$2\sqrt{3}$
y

25)

u v
60°
$2\sqrt{5}$

26)

30°
m n

12)

x, 4, 45°, y

14)

$2\sqrt{5} = x$, 30°, $\sqrt{15}$

$y = \dfrac{\sqrt{15}}{\sqrt{3}} = \sqrt{\dfrac{15}{3}} = \sqrt{5}$

-1-

(20) 60, $a = 5 \cdot 2 = 10$

5, 30, $b = 5\sqrt{3}$

$\dfrac{9\sqrt{3}}{2} \div \sqrt{3} =$

$\dfrac{9\sqrt{3}}{2} \cdot \dfrac{1}{\sqrt{3}} =$

$\dfrac{9\sqrt{3}}{2\sqrt{3}} = \dfrac{9}{2}$

Oct 12-10:48 AM

4

What does it mean for a radical to be in "simplest form?"

Radicand: $\sqrt{}$

-There are no perfect square factors in the radicand.

-There are no radicands in the denominator of a fraction.

Perfect squares:

1,4,16,25,36,49,64,81,100,121,144,...

$$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{1\sqrt{2}}{\sqrt{2 \cdot 2}} = \frac{1\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$$

$$\frac{1 \cdot 2}{2 \cdot 2} = \frac{2}{4} \cdot \frac{3}{3} = \frac{6}{12}$$

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

$$\frac{2}{\sqrt{3}} = \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{\sqrt{3 \cdot 3}} = \frac{2\sqrt{3}}{\sqrt{9}} = \frac{2\sqrt{3}}{3}$$

$$\frac{7}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{7\sqrt{5}}{\sqrt{25}} = \frac{7\sqrt{5}}{5}$$

Oct 9-8:46 AM

Simplify with your group.

$$\sqrt{810}$$

$$\sqrt{112}$$

$$\sqrt{27}$$

$$\sqrt{800}$$

Practice on a piece of paper.

a. $\sqrt{96}$

b. $\sqrt{200}$

c. $\sqrt{392}$

d. $\sqrt{175}$

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Simplify with your group.

$$\frac{4}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{4\sqrt{5}}{\sqrt{25}} = \frac{4\sqrt{5}}{5}$$

$$\frac{2}{\sqrt{3}}$$

$$\frac{14}{\sqrt{2}}$$

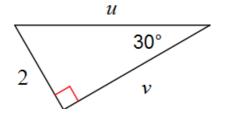$$\frac{12}{\sqrt{6}}$$

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Practice on a piece of paper.

a. $\dfrac{1}{\sqrt{2}}$

b. $\dfrac{8}{\sqrt{7}}$

c. $\dfrac{4}{\sqrt{6}}$
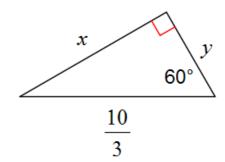
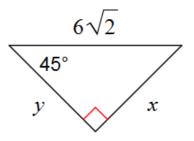d. $\dfrac{4}{\sqrt{10}}$

Practice on a piece of paper.

a.

u

30°

2

v

b.

v

$\dfrac{7\sqrt{6}}{6}$

30°

u

c.

$\dfrac{7}{2}$

x

60°

y

d.

x

y

60°

$\dfrac{10}{3}$

e.

$6\sqrt{2}$

45°

y   *x*

f.

m

45°

10   *n*

g.

45°

8   *x*

y

h.

$\dfrac{7\sqrt{3}}{3}$

m

45°

n

Oct 9-8:53 AM