9.6 Q&A

Note Title 2/23/2015

1d $(1, 1\frac{1}{3}, \_\_)$

$(\frac{3}{3}, \frac{4}{3}, \_\_)$

$\frac{1}{3}(3, 4, 5) \Rightarrow 5/3$

4d $(\_\_, 1\frac{1}{2}, 1\frac{7}{10})$

$(\frac{3}{2}, \frac{17}{10})$

$(\frac{15}{10}, \frac{17}{10})$

$\frac{1}{10}(8, 15, 17) \Rightarrow \frac{8}{10} = \frac{4}{5}$

4b $(1.6, 3, \_\_)$

$(\frac{16}{10}, \frac{30}{10}, \_\_)$

$(\frac{8}{5}, \frac{15}{5}, \_\_)$

$\frac{1}{5}(8\ 15\ 17) \Rightarrow 17/5$

4e $(\_\_, 150, 170)$

$10(\_\_, 15, 17) \Rightarrow 80$

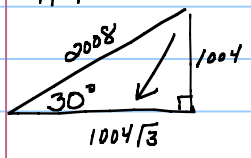
8

2e $(2\frac{1}{2}, 6, \_\_)$

$(5/2, 12/2, \_\_)$

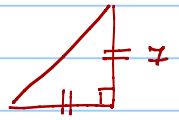
$1/2(5, 12, 13) \rightarrow 13/2$

9.7:



30 - 60 - 90

x	x√3	2x
1004	1004√3	2008
short side opp sm ∠		Largest side opp largest ∠



45 - 45 - 90

x	x	x√2
7	7	7√2

AMDG

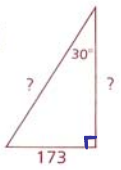
9.7: Speical Right Triangles

MEMORIZE THEM!

Note Title 2/23/2015

1 Find the two missing sides in each 30°-60°-90° triangle. Try to do the calculations in your head.

d

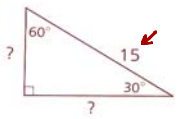


30	60	90
x	$x\sqrt{3}$	2x
173	$173\sqrt{3}$	346

$$\begin{array}{r} 173 \\ +\ 173 \\ \hline 346 \end{array}$$

2 Find the two missing sides of each triangle. (Hint: These are a bit harder, and you may want to put x, $x\sqrt{3}$, and 2x on the proper sides as shown in the sample problems.)

b



30	60	90
x	$x\sqrt{3}$	2x
$\frac{15}{2}$	$\frac{15}{2}\sqrt{3}$	15

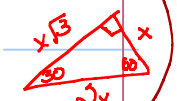
$2x = 15$

$x = \frac{15}{2}$

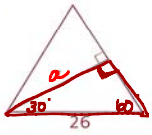
3 Solve for the variable in each of these equilateral triangles.

$\angle s \rightarrow \frac{180}{3} = 60°$

IN GENERAL:



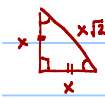
c



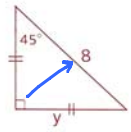
30	60	90
x	$x\sqrt{3}$	2x
13	$13\sqrt{3}$	26

IF $2x = 26$ THEN $x = 13$

4 Solve for the variable in each of these 45°-45°-90° triangles.



b



45	45	90	
x	x	$x\sqrt{2}$	8
$4\sqrt{2}$	$4\sqrt{2}$		

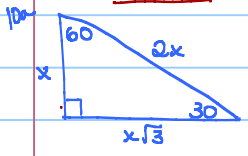
EQUATION:

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

$x = \frac{8\sqrt{2}}{\sqrt{4}} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$

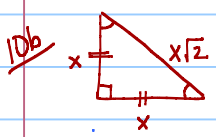
10 a Find the ratio of the longer leg to the hypotenuse in a 30°-60°-90° triangle.

b Find the ratio of one of the legs to the hypotenuse in a 45°-45°-90° triangle.



30	60	90	
x	$x\sqrt{3}$	2x	long leg / hyp

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



45	45	90	
x	x	$x\sqrt{2}$	leg / hyp

$\frac{x}{x\sqrt{2}} = \frac{1}{\sqrt{2}}\frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

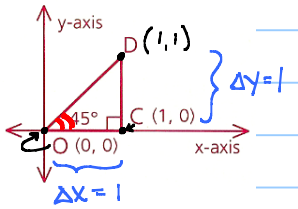
13 a Find the coordinates of D. (1, 1)

b Find the slope of $\overleftrightarrow{OD}$. $\frac{\Delta y}{\Delta x} = \frac{1}{1} = 1$

c Find the tangent of 45°.

$\tan\angle = \frac{\text{OPP LEG}}{\text{ADJ LEG}}$

$\tan 45° = \frac{DC}{OC} = \frac{1}{1} = 1$



Assignment: 9.7: 405/ 1-10, 12 and Chapter review, p 429, 1-16