

NAME

Note Title

1/5/2016

MSK.

Acc Geo

5 Jan 16

9.6: FAMILIES OF RT $\triangle$ (aka PYTH. TRIPLES)

- REDUCED $\triangle$ PRINCIPLE (see p 399)
 - FACTOR SCALAR
 - FIND MSG SD
 - APPLY SCALAR

P401

FIND MSG SD RT $\triangle$

* 1. (3, 4, 5)

a (15, 20, —) $\rightarrow$ 5(3, 4, 5) $\rightarrow$ 25

Don't need to do: $15^2 + 20^2 = c^2$

b (27, —, 45) $\rightarrow$ 9(3, 4, 5) $\rightarrow$ 36

c

d

e

2. (5, 12, 13)

a. (—, 24, 26) $\rightarrow$ 2(5, 12, 13) $\Rightarrow$ 10

b

c

d

e (2 $\frac{1}{2}$, 6, —) $\rightarrow$ ($\frac{5}{2}$, $\frac{12}{2}$, —) $\rightarrow$ $\frac{1}{2}$ (5, 12, 13) $\rightarrow$ 13/2

3. (7, 24, 25)

a.

b

c

d $(0.7, -, 2.5) \rightarrow \frac{1}{10} (7, 24, 25) \rightarrow 2.4$

e

4 (8 15 17)

a

b

c

d $(-, 1\frac{1}{2}, 1\frac{7}{10}) \rightarrow (, \frac{15}{10}, \frac{17}{10}) \rightarrow \frac{1}{10} (8, 15, 17) \rightarrow \frac{8}{10} \rightarrow \frac{4}{5}$

e

5 Mixed

a. $(9 - 15) \rightarrow 3(3, 4, 5) \rightarrow 12$

b $(6 - 8) \rightarrow 2(3, , 4) \rightarrow 3^2 + x^2 = 4^2, x = \sqrt{7} \rightarrow 2\sqrt{7}$

c

d $(1.2, 1.3) \rightarrow 0.1(5, 12, 13) \rightarrow 0.5$

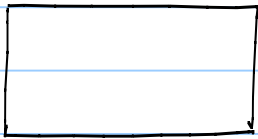
e

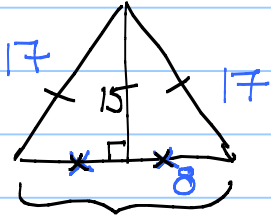
f

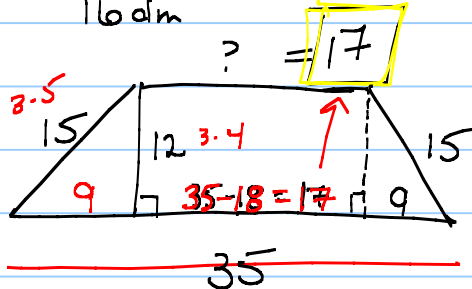
g

h

i

6.  $(20 \ 48 \ d)$
 $\hookrightarrow (5 \ 12 \ 13) \rightarrow d = 52$

7.  $2(17) + 16$
 $34 + 16 = 50 \text{ dm}$

8.  $? = 17$

9a. $(16, 8\sqrt{5}, \text{---}) \rightarrow 8(2, \sqrt{5}, 3) \rightarrow 24$
 $2^2 + \sqrt{5}^2 = 3^2$
 squared $\rightarrow 4 + 5 = 9$
 $\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$

9b



1-5, 9-11, 13, 15-18, 22, 23



Find $x : y$

in my head →

$$\begin{aligned} \text{leg}^2 + \text{leg}^2 &= \text{hyp}^2 \\ x^2 + (3x+y)^2 &= (4x-y)^2 \\ x^2 + (3x+y)(3x+y) &= (4x-y)(4x-y) \\ x^2 + 9x^2 + 3xy + 3xy + y^2 &= 16x^2 - 4xy - 4xy + y^2 \\ \underline{x^2 + 9x^2 + 6xy + y^2} &= 16x^2 - 8xy + y^2 \end{aligned}$$

$$\begin{array}{r} 10x^2 + 6xy + y^2 = 16x^2 - 8xy + y^2 \\ -10x^2 + 8xy - y^2 \quad -10x^2 + 8xy - y^2 \end{array}$$

$$\begin{aligned} 14xy &= 6x^2 \\ 14y &= 6x \\ \underline{7y} &= \underline{3x} \\ \underline{3y} & \quad \underline{3y} \end{aligned}$$