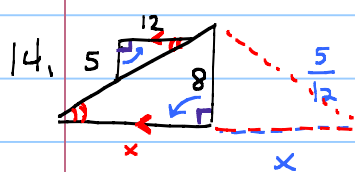


# 8.2 HOMEWORK &

Q&A 5, 6, 9-14

Note Title

1/20/2016



$$5x = 8(12)$$

$$5x = 8(10+2)$$

$$5x = 80 + 16 \quad x = \frac{96}{5} \approx 19.2$$

$$5x = 96$$

$$\text{So } 2x \approx 38.4 \text{ ft}$$

13.  $\frac{x}{y} = \frac{11}{34}$

$$\frac{8}{2x-3y} = \frac{7}{6x-4y}$$

$$8(6x-4y) = 7(2x-3y)$$

$$48x - 32y = 14x - 21y$$

$$-14x + 32y \quad -14x + 32y$$

$$\frac{34x}{34y} = \frac{11y}{34y}$$

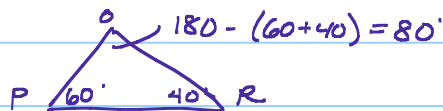
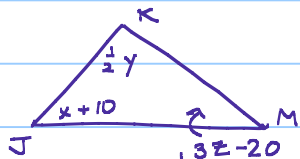
$$\frac{x}{y} = \frac{11}{34}$$

12. Find ratio of 4th of 1, 2, 3  $\rightarrow \frac{1}{2} = \frac{3}{a} \rightarrow a = 6$   
 to 4th of 4, 5, 6  $\frac{4}{5} = \frac{6}{b} \rightarrow 4b = 30 \quad b = \frac{15}{2}$

Then  $\frac{a}{b} = \frac{6}{15/2} \rightarrow 6 \div \frac{15}{2} = 6 \cdot \frac{2}{15} \rightarrow \frac{12}{15}$  reduce  $\boxed{\frac{4}{5}}$

11. 205

$\sim \Delta s \Rightarrow \cong \Delta s$



$$\angle J = \angle P$$

$$x + 10 = 60$$

$$x = 50$$

$$\angle K = \angle O$$

$$\frac{1}{2} y = 80$$

$$y = 160$$

$$\angle M = \angle R$$

$$3z - 20 = 40$$

$$\frac{3z}{10} = 60$$

$$3z = 600$$

$$z = 200$$

Find  $\frac{x+y+z}{2} = \frac{410}{2} = 205$

10b. Find EF  $\frac{9}{A} = \frac{12}{C}$   $\frac{6}{H} = \frac{E}{F}$   $\frac{3}{4} = \frac{6}{EF}$   $\frac{3}{4} = \frac{6}{EF} \rightarrow EF = \frac{2 \cdot 4 \cdot 6}{3}$

10. a  $3/2$

9.  $WY = 5.6$  &  $VT = 7.5$

b 8

6. mean prop

c 32

a. 4 & 25  $\rightarrow \frac{4}{x} = \frac{x}{25} \rightarrow x^2 = 100$   
 $x = \pm 10$

d  $3/2$

b. 2 & 5  $\rightarrow \frac{2}{x} = \frac{x}{5} \rightarrow x = \pm \sqrt{10}$

4.  $\triangle ABC \sim \triangle DEF \rightarrow EF = 5$

Arith Mean 4 & 25 :  $29/2$

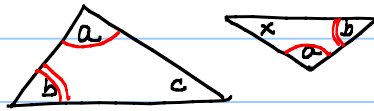
Geo mean  
 (aka mean prop) :  $\frac{4}{x} = \frac{x}{25} \rightarrow x^2 = 100 \rightarrow x = \pm 10$

**Congruent  $\triangle$ s**  
 $\cong$  sides,  $\cong$  m  $\angle$ s

**Similar  $\triangle$ s**  
 sides proportional  
 $\cong$  m  $\angle$ s

- SSS
- SAS
- ASA
- HL
- AAS

8.3



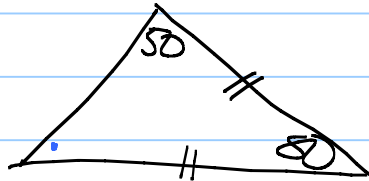
$$a + b + c = 180$$

$$a + b + x = 180$$

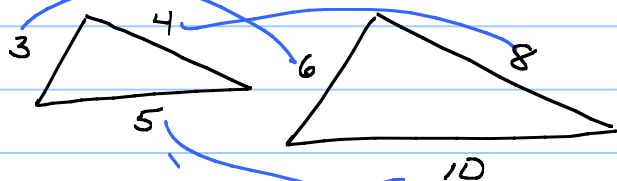
$$a + b + c = a + b + x$$

$$-a - b \quad -a - b$$

$$c = x \quad \text{No Choice}$$

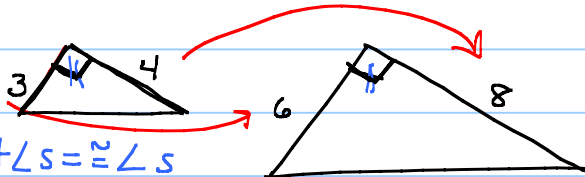


AA ~



$$\frac{3}{6} = \frac{4}{8} = \frac{5}{10}$$

SSS ~

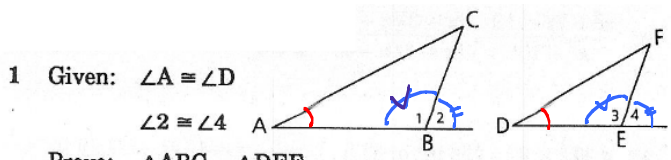


$$\text{right } \angle \text{s} = \cong \angle \text{s}$$

$$\frac{6}{3} = \frac{8}{4}$$

SAS ~

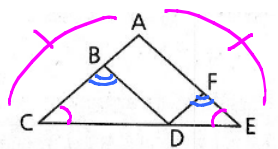
New:  
 AA ~  
 SSS ~  
 SAS ~



1 Given:  $\angle A \cong \angle D$   
 $\angle 2 \cong \angle 4$   
 Prove:  $\triangle ABC \sim \triangle DEF$   
 1  $\angle A \cong \angle D, \angle 2 \cong \angle 4$   
 2  $\angle 1$  supp  $\angle 2$   
 $\angle 3$  supp  $\angle 4$   
 3  $\angle 1 \cong \angle 3$   
 4  $\triangle ABC \sim \triangle DEF$

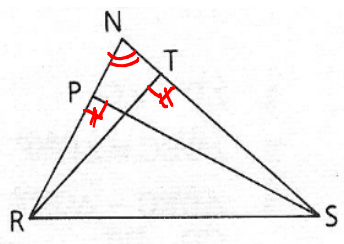
1 Given  
 2 st $\angle \Rightarrow$  supp $\angle$ s  
 3  $\angle$ s supp to  $\cong \angle$ s  $\Rightarrow \cong \angle$ s  
 4 AA~

4 Given:  $\overline{AC} \cong \overline{AE}$   
 $\angle CBD \cong \angle EFD$   
 Prove:  $\triangle BCD \sim \triangle FED$   
 1  $\overline{AC} \cong \overline{AE}$   
 2  $\angle C \cong \angle E$   
 3  $\angle CBD \cong \angle EFD$   
 4  $\triangle BCD \sim \triangle FED$



1 Given  
 2 ~~AA~~  $\Rightarrow$   $\Delta \Delta$   
 3 Given  
 4 AA~

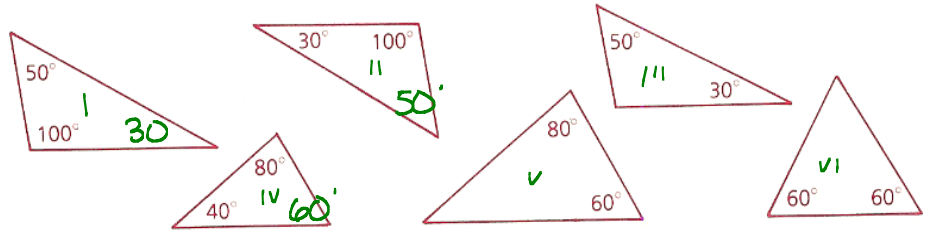
12 Given:  $\overline{SP}$  alt from S to  $\overline{NR}$   
 $\overline{RT}$  alt from R to  $\overline{NS}$



Concl:  $\triangle NRT \sim \triangle NSP$   
 1  $\overline{SP}$  alt from S to  $\overline{NR}$   
 2  $\overline{RT}$  alt from R to  $\overline{NS}$   
 3  $\overline{RT} \perp \overline{NS}$   
 4  $\overline{SP} \perp \overline{NR}$   
 5  $\angle RTN$  rt  $\angle$   
 6  $\angle SPN$  rt  $\angle$   
 7  $\angle RTN \cong \angle SPN$   
 8  $\angle N \cong \angle N$   
 9  $\triangle NRT \sim \triangle NSP$

1 Given  
 2 Given  
 3 alt  $\Rightarrow \perp$  (2)  
 4 alt  $\Rightarrow \perp$  (1)  
 5  $\perp \Rightarrow$  rt  $\angle$  (3)  
 6  $\perp \Rightarrow$  rt  $\angle$  (4)  
 7 rt  $\angle$ s  $\Rightarrow \cong \angle$  (5,6)  
 8 Reflexive  
 9 AA~

22 If two of the six triangles below are selected at random, what is the probability that the two triangles are similar?



- I II
- I III
- I IV
- I V
- I VI
- II, III
- II IV
- II V
- II VI
- III IV
- III V
- III VI
- IV V
- IV VI
- V VI

## 8.3: Proving Triangles Similar

2, 3, 6, 8, 10, 16, 19, 20

Note Title

1/20/2016

