

1.  $G: \overline{OR} \cong \overline{OS}$   
 $\overline{ST} \cong \overline{TR}$   
 P:  $\overline{FS} \cong \overline{FR}$

S  
 1.  $\overline{OR} \cong \overline{OS}$   
 $\overline{ST} \cong \overline{TR}$

R  
 1. Given

2.  $\overline{FO} \perp \text{bis} \overline{SR}$  2. = dist  $\Rightarrow \perp \text{ bis}$   
 3.  $\overline{FS} \cong \overline{FR}$  3.  $\perp \text{ bis} \Rightarrow \text{dist}$

$A(12, 2)$  &  $B(1, k)$ ,  $m = 8/13$

$$\frac{8}{13} = \frac{2 - k}{12 - 1} \quad ; \quad \frac{8}{13} = \frac{2 - k}{11} \quad ; \quad 88 = 26 - 13k$$

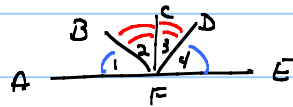
$$\frac{62}{-13} = \frac{-13k}{-13} \quad ; \quad k = \boxed{-62/13}$$

proof

4.  $G: \angle 1 \cong \angle 4$

$\overrightarrow{FC} \text{ bis} \angle BFD$

P:  $\overleftrightarrow{CF} \perp \overleftrightarrow{AE}$



S  
 1.  $\angle 1 \cong \angle 4$

R  
 1. Given

2.  $\overrightarrow{FC} \text{ bis} \angle BFD$

2. Given

3.  $\angle 2 \cong \angle 3$

3.  $\text{bis} \Rightarrow \cong \angle s$

4.  $\angle AFC \cong \angle CFE$

4 Add (1 3)

5.  $\angle AFC \text{ supp} \angle CFE$

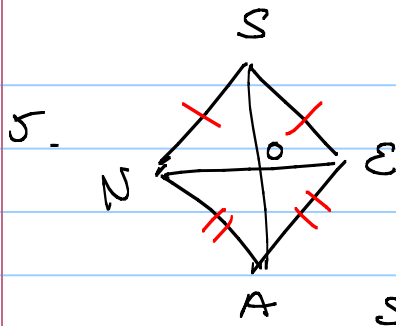
5.  $\text{stz} \Rightarrow \text{supp} \angle s$

6.  $\angle AFC \text{ \& } \angle CFE \text{ rt} \angle$

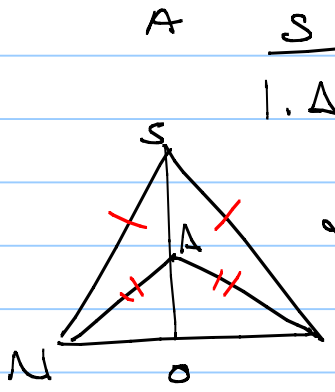
6.  $\cong \text{ \& } \text{supp} \angle s \Rightarrow \text{rt} \angle s$

7.  $\overleftrightarrow{CF} \perp \overleftrightarrow{AE}$

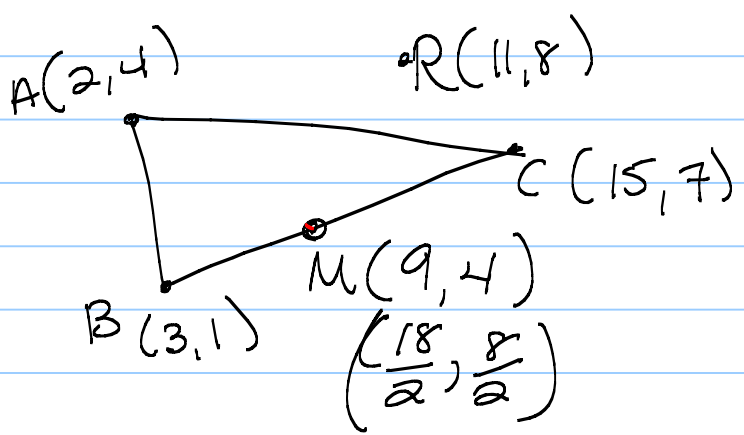
7.  $\text{rt} \angle \Rightarrow \perp$



5. G:  $\triangle SEN$  &  $\triangle ANE$  isos  $\triangle$  base  $\overline{NE}$   
 P:  $\overline{SA} \perp$  bis  $\overline{NE}$



1.  $\triangle SEN$  &  $\triangle ANE$  isos  $\triangle$  1. Given  
 base  $\overline{NE}$   
 $\therefore \overline{SE} \cong \overline{SN}$  &  $\overline{AE} \cong \overline{AN}$   
 2. isos  $\triangle \Rightarrow \angle \cong$  sds  
 3.  $\perp$  bis  $\overline{NE}$  3. = dist  $\Rightarrow \perp$  bis



b.  $m \overline{BC} = \frac{7-1}{15-3} = \frac{6}{12} = \frac{1}{2}$

c.  $m \overline{AR} = \frac{8-4}{11-2} = \frac{4}{9}$       $m \overline{AR} \neq m \overline{BC} \therefore \overline{AR} \not\parallel \overline{BC}$

d. alt from A to  $\overline{BC}$  is  $-\frac{2}{1}$  or  $(-2)$   
 alt  $\Rightarrow \perp$   
 $m \perp \Rightarrow$  opp recip

e A (2, 4)

7 units

m (9, 4)