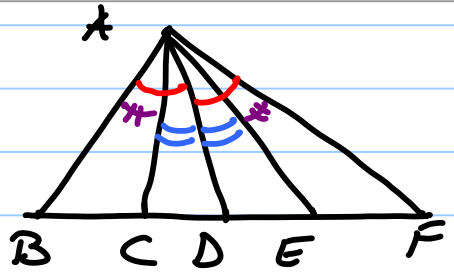
Q&A

W 9/9/15

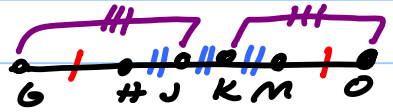
Note Title 9/9/2015

11. G: $\angle BAD \cong \angle FAD$
$\overrightarrow{AD}$ bis $\angle CAE$
P: $\angle BAC \cong \angle FAE$



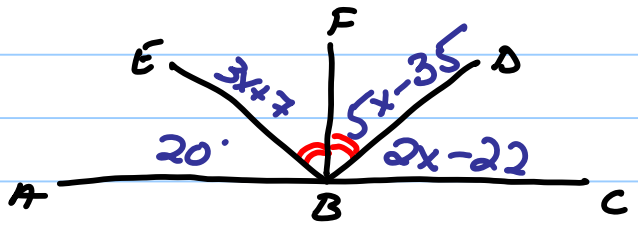
Statements	Reasons
1. $\angle BAD \cong \angle FAD$	1. GIVEN
2. $\overrightarrow{AD}$ bis $\angle CAE$	2. GIVEN
3. $\angle CAD \cong \angle DAE$	3. $\rightarrow$ bis $\angle \Rightarrow \cong \angle$s (2)
4. $\angle BAC \cong \angle FAE$	4. Subtract

12. G: J&K trs $\overline{HM}$, $\overline{GH} \cong \overline{MO}$
P: $\overline{GJ} \cong \overline{KO}$



Statements	Reasons
1. $\overline{GH} \cong \overline{MO}$	1. Given
2. J&K trs $\overline{HM}$	2. Given
3. $\overline{HJ} \cong \overline{KM}$	3. trs $\Rightarrow$ 3 $\cong$ segs (2)
4. $\overline{GJ} \cong \overline{KO}$	4. Add

17. $\overrightarrow{BF}$ bis $\angle DBE$



$\angle EBF \cong \angle FBD$

$3x+7 = 5x-35$

$42 = 2x$

$21 = x$

Then $\angle EBF = 3(20+1)+7$

$60 + 3 + 7 = 70°$

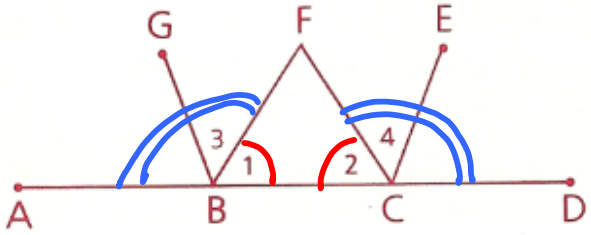
Thus $\angle ABF = 90$

a) $\overrightarrow{BF}$ does bis $\angle CBA$

b) $\angle ABC = 180°$ & $\overline{BF} \perp \overline{AC}$

2.6 # 13

13 Given: $\angle 1 \cong \angle 2$;
$\overrightarrow{BG}$ bisects $\angle ABF$.
$\overrightarrow{CE}$ bisects $\angle FCD$.
Prove: $\angle 3 \cong \angle 4$



Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. Given
2. $\angle ABF$ supp $\angle 1$ $\angle FCD$ supp $\angle 2$	2. st $\angle \rightarrow$ supp $\angle$
3. $\angle ABF \cong \angle DCF$	3. $\angle$s supp to $\cong \angle$s $\Rightarrow \cong \angle$ (1,2)
4. $\overrightarrow{BG}$ bis $\angle ABF$ $\overrightarrow{CE}$ bis $\angle FCD$	4. Given
5. $\angle 3 \cong \angle 4$	5. $\div$ (3,4)

H. $\angle = x$
$C = 90 - x$
$S = 180 - x$

$4(180-x) + 8(90-x) = 3(180)$
$4(180) - 4x + 4(180) - 8x = 3(180)$
$8(180) - 12x = 3(180)$
$\frac{5(180)}{6} = \frac{12x}{6}$
$5(30) = 2x$
$5(15) = x$
$75 = x$

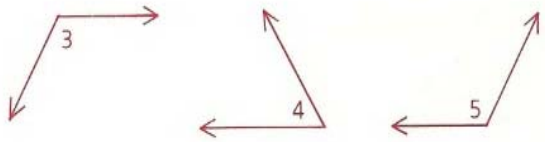
$\angle = 75$
$C = 15$
$S = 105$

supp to comp
$180 - 15 = 165^\circ$

Theorem 4 *If angles are supplementary to the same angle, then they are congruent.*

∠s supp same ∠ ⇒ ≅ ∠s

Given: ∠3 is supp. to ∠4.
∠5 is supp. to ∠4.
Prove: ∠3 ≅ ∠5

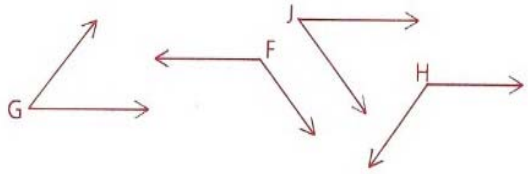


Proof: ∠3 is supp. to ∠4, so m∠3 + m∠4 = 180.
Therefore, m∠3 = 180 − m∠4.
∠5 is supp. to ∠4, so m∠5 + m∠4 = 180.
Therefore, m∠5 = 180 − m∠4.
Since ∠3 and ∠5 have the same measure, ∠3 ≅ ∠5.

Theorem 5 *If angles are supplementary to congruent angles, then they are congruent.*

∠s supp ≅ ∠s ⇒ ≅ ∠

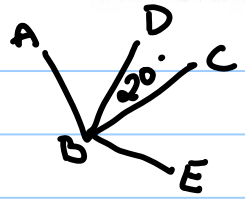
Given: ∠F is supp. to ∠G.
∠H is supp. to ∠J.
∠G ≅ ∠J
Conclusion: ∠F ≅ ∠H



Theorem 6 *If angles are complementary to the same angle, then they are congruent.*

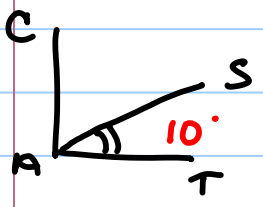
∠s comp to same ∠ ⇒ ≅ ∠s

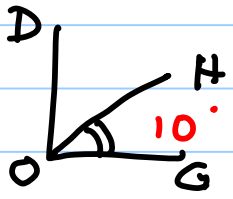
Theorem 7 *If angles are complementary to congruent angles, then they are congruent.*



∠ABC rt ∠
∠DBE rt ∠

∠ABD = 70°
∠CBE = 70°





∠s comp to ≅ ∠s ⇒ ≅ ∠s

2.7

substitute $\angle ABC = 20$

$\angle ABC + 30^\circ = \angle DEF$

$20 + 30 =$

$50 =$

transitive

$\angle A \cong \angle B$

$\angle B \cong \angle C$

$\angle A \cong \angle C$

$\angle A = 30$

Substitute

$\angle A = \angle B$

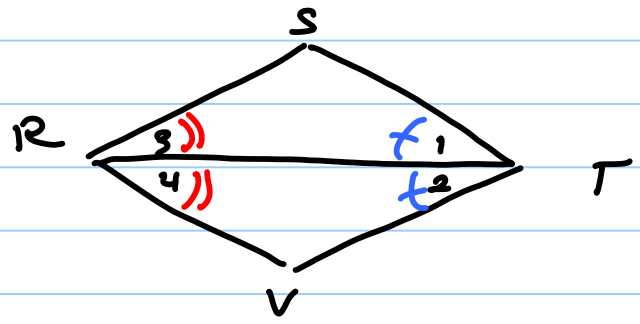
$\angle B \cong \angle C$

Read Sec 2.4 Problems 11, 13 – 21
Read Sec 2.7 Problems 7-11,14-16

2.4 : 16

G: $\angle 1$ comp $\angle 4$
$\angle 2$ comp $\angle 3$
$\overrightarrow{RT}$ bis $\angle SRV$

P: $\overrightarrow{TR}$ bis $\angle STV$

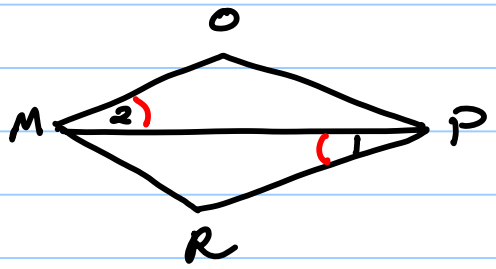


Statements	Reasons
1. $\overrightarrow{RT}$ bis $\angle SRV$	1. Given
2. $\angle 3 \cong \angle 4$	2. $\rightarrow$ bis $\angle \Rightarrow \cong \angle s$ (1)
3. $\angle 2$ comp $\angle 3$ $\angle 1$ comp $\angle 4$	3. Given
4. $\angle 1 \cong \angle 2$	4. $\angle s$ comp $\cong \angle s \Rightarrow \cong \angle s$ (2,3)
5. $\overrightarrow{TR}$ bis $\angle STV$	5. $\cong \angle s \Rightarrow$ bis

2.7 : 7

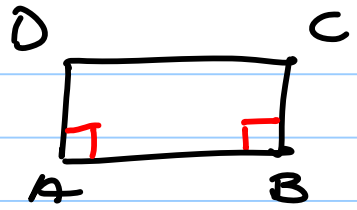
G: $\angle OMP \cong \angle RPM$
$\overrightarrow{MP}$ bis $\angle OMR$
$\overrightarrow{PM}$ bis $\angle OPR$

P : $\angle OMR \cong \angle OPR$



Statements	Reasons
1. $\angle OMP \cong \angle RPM$ $\overrightarrow{MP}$ bis $\angle OMR$ $\overrightarrow{PM}$ bis $\angle OPR$	1. Given
2. $\angle OMR \cong \angle OPR$	2. Mult.

15. G: $\angle A$ rt $\angle$
$\angle B$ rt $\angle$
$\angle B \cong \angle D$
P: $\angle A \cong \angle D$



Statements	Reasons
1. $\angle A$ rt $\angle$ & $\angle B$ rt $\angle$	1. Given
2. $\angle A \cong \angle B$	2. 2 rt $\angle$s $\Rightarrow \cong \angle$s (1)
3. $\angle B \cong \angle D$	3. Given
4. $\angle A \cong \angle D$	4. Trans (2, 3)