2.5

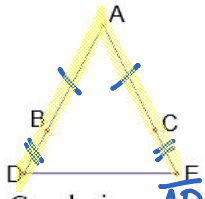
Tuesday, September 6, 2016 8:59 AM

Geo H Name: _____

2.5 Addition and Subtraction of Segments and Angles

Directions: Use the given information to draw a conclusion. Then state the reason why you drew that conclusion.

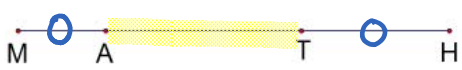
1. Given: $\overline{AB} \cong \overline{AC}$, $\overline{BD} \cong \overline{CE}$



Conclusion: $\overline{AD} \cong \overline{AE}$

Reason: If 2 ≅ segs + 2 ≅ segs → ≅ segs

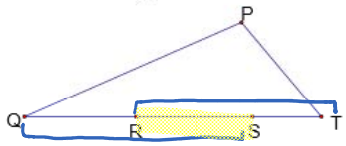
2. Given: $\overline{MA} \cong \overline{TH}$



Conclusion: $\overline{MT} \cong \overline{AH}$

Reason: If 2 ≅ segs + the same seg → ≅ segs

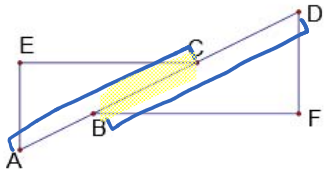
3. Given: $\overline{QS} \cong \overline{RT}$



Conclusion: $\overline{QR} \cong \overline{ST}$

Reason: If 2 ≅ segs – same seg → ≅ segs

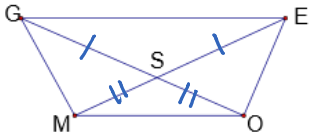
4. Given: $\overline{AC} \cong \overline{BD}$



Conclusion: $\overline{AB} \cong \overline{CD}$

Reason: If 2 ≅ segs – same seg → ≅ segs

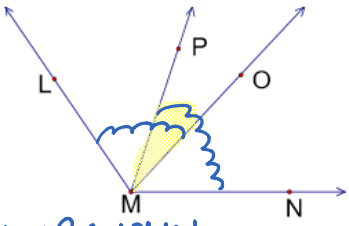
5. Given: $\overline{GS} \cong \overline{SE}$, $\overline{SM} \cong \overline{SO}$



Conclusion: $\overline{GO} \cong \overline{ME}$

Reason: If 2 ≅ segs + 2 ≅ segs → ≅ segs

6. Given: $\angle LMO \cong \angle PMN$



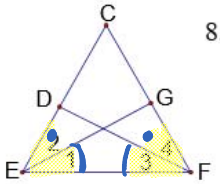
Conclusion: $\angle LMP \cong \angle OMN$

Reason: If 2 ≅ angles – same angle → ≅ angles

$\angle LMO - \angle PMO = \angle PMN - \angle PMO$

7. Given: $\angle 1 \cong \angle 3$

$\angle 2 \cong \angle 4$

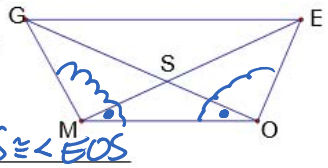


Conclusion: $\angle DEF \cong \angle GFE$

Reason: If $\cong$ angles + $\cong$ angles → $\cong$ angles

8. Given: $\angle GMO \cong \angle EOM$

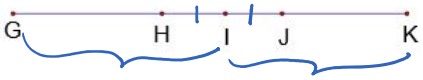
$\angle EMO \cong \angle GOM$



Conclusion: $\angle GMS \cong \angle EOS$

Reason: If $\cong$ angles − $\cong$ angles → $\cong$ angles

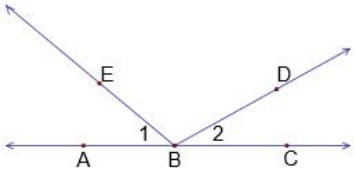
9. Given: I is the midpoint of $\overline{HJ}$ and $\overline{GI} \cong \overline{IK}$



Conclusion: $\overline{GH} \cong \overline{JK}$ $\overline{GJ} \cong \overline{HK}$

Reason: If $\cong$ segs − $\cong$ segs → $\cong$ segs If $\cong$ segs + $\cong$ segs → $\cong$ segs

10. Given: $\angle ABD \cong \angle EBC$



Conclusion: $\angle 1 \cong \angle 2$

Reason: If $\cong$ angles − same angle → $\cong$ angles

11. Given: $\overline{DO} \cong \overline{AT}$

$\overline{OG} \cong \overline{CA}$

Conclusion: $\overline{DG} \cong \overline{CT}$

Reason: If $\cong$ segs + $\cong$ segs → $\cong$ segs

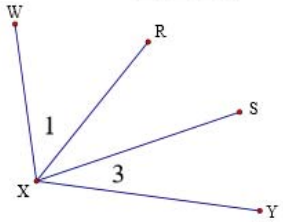
12. Given: $\overline{DO} \cong \overline{AT}$

$\overline{DG} \cong \overline{CT}$

Conclusion: $\overline{OG} \cong \overline{CA}$

Reason: If $\cong$ segs − $\cong$ segs → $\cong$ segs

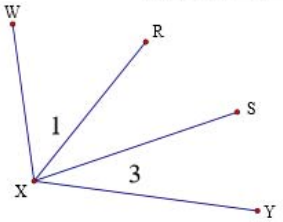
13. Given: $\angle 1 \cong \angle 3$



Conclusion: $\angle WXS \cong \angle RXY$

Reason: If 2 ≅ angles + same angle → ≅ angles

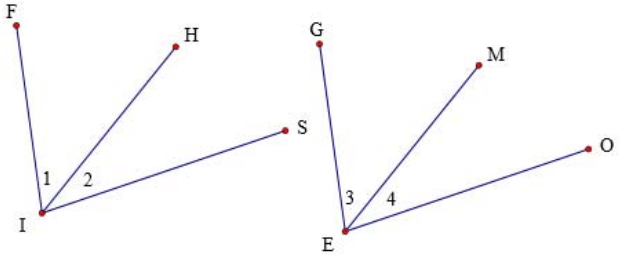
14. Given: $\angle WXS \cong \angle RXY$



Conclusion: $\angle 1 \cong \angle 3$

Reason: If 2 ≅ angles − same angle → ≅ angles

15. Given: $\angle 1 \cong \angle 3$
$\angle 2 \cong \angle 4$



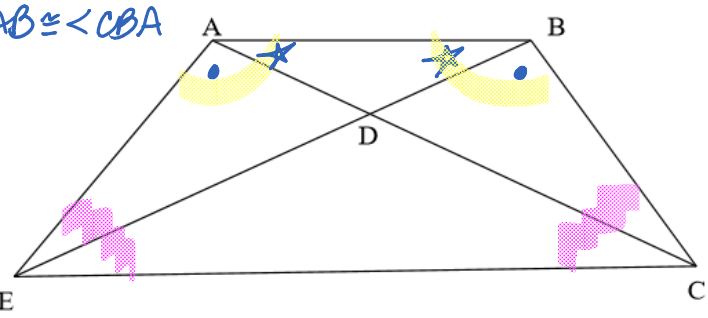
Conclusion: $\angle FIS \cong \angle GEO$

Reason: If 2 ≅ angles + 2 ≅ angles → ≅ angles

16. Given: $\angle AEC$ is supp. to $\angle EAB$
$\angle BCE$ is supp. to $\angle CBA$
$\angle EAC \cong \angle CBE$
$\angle BAC \cong \angle ABE$

Prove: $\angle AEC \cong \angle BCE$

$\angle EAB \cong \angle CBA$



Given → addition → ≅ supps

Statements	Reasons
1. $\angle EAC \cong \angle CBE$, $\angle BAC \cong \angle ABE$	1. Given
2. $\angle EAB \cong \angle ABC$	2. If 2 ≅ angles + 2 ≅ angles → ≅ angles
3. $\angle AEC$ Supp $\angle EAB$, $\angle BCE$ Supp $\angle CBA$	3. Given
4. $\angle AEC \cong \angle BCE$	4. If 2 angles are supp to ≅ angles → ≅.