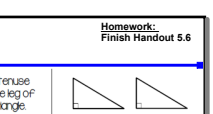
Geometry CC – Unit 5
Lesson 6: Hypotenuse - Leg
M1 L22-27

Homework:
Finish Handout 5.6

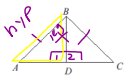
HL
(Hypotenuse-Leg)

The hypotenuse and any one leg of a right triangle.



1) Given: ~~$\overline{BD} \perp \overline{AC}$~~, ~~$\overline{AB} \cong \overline{CB}$~~

Prove: $\triangle ADB \cong \triangle CDB$



Statement	Reason
1) $\overline{BD} \perp \overline{AC}$	1) Given
2) $\overline{AB} \cong \overline{CB}$	2) Given
3) $\angle 1$ & $\angle 2$ are rt. $\angle$'s	3) $\perp$ lines form rt. $\angle$'s
4) $\angle 1 \cong \angle 2$	4) All rt. $\angle$'s are $\cong$
5) $\overline{BD} \cong \overline{BD}$	5) Reflexive Property
6) $\triangle ABD$ & $\triangle CBD$ are Rt $\triangle$s	6) A right triangle contains 1 Rt $\angle$
7) $\triangle ABD \cong \triangle CBD$	7) HL $\cong$ HL

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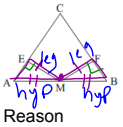
2) Given: ~~M is the midpoint of $\overline{AB}$~~, ~~$\overline{ME} \perp \overline{AC}$~~, ~~$\overline{MF} \perp \overline{CB}$~~, ~~$\overline{ME} \cong \overline{MF}$~~

Prove: $\triangle AEM \cong \triangle BFM$



Statement	Reason
1) M is the midpoint of $\overline{AB}$	1) Given
2) $\overline{ME} \perp \overline{AC}$, $\overline{MF} \perp \overline{CB}$	2) Given
3) $\overline{ME} \cong \overline{MF}$	3) Given
4) $\overline{AM} \cong \overline{BM}$	4) Def. of a Midpoint
5) $\triangle MAE$ & $\triangle MBF$ are Rt $\triangle$s	5) $\perp$ lines form rt. $\angle$'s
6) $\triangle MAE \cong \triangle MBF$	6) All rt. $\angle$'s are $\cong$
7) $\triangle AEM$ & $\triangle BFM$ are Rt $\triangle$s	7) Rt $\triangle$'s contain 1 right $\angle$
8) $\triangle AEM \cong \triangle BFM$	8) HL $\cong$ HL

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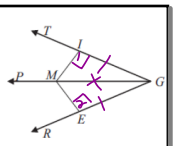
3) Given: $\overline{MI} \perp \overline{TG}$, $\overline{ME} \perp \overline{RG}$, $\overline{GI} \cong \overline{GE}$

Prove: $\triangle MIG \cong \triangle MEG$



Statement	Reason
1) $\overline{MI} \perp \overline{TG}$, $\overline{ME} \perp \overline{RG}$	1) Given
2) $\overline{GI} \cong \overline{GE}$	2) Given
3) $\angle 1$ & $\angle 2$ are rt. $\angle$'s	3) $\perp$ lines form rt. $\angle$'s
4) $\angle 1 \cong \angle 2$	4) All rt. $\angle$'s are $\cong$
5) $\overline{MG} \cong \overline{MG}$	5) Reflexive Property
6) $\triangle MIG$ & $\triangle MEG$ are Rt $\triangle$s	6) Rt $\triangle$'s contain 1 rt $\angle$
7) $\triangle MIG \cong \triangle MEG$	7) HL $\cong$ HL

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