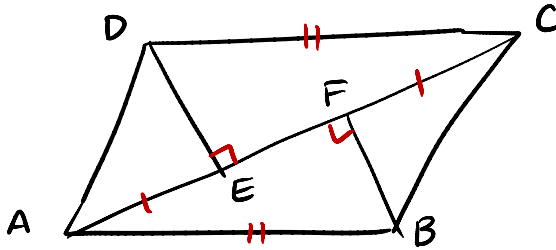


#4 $\overline{AB} \cong \overline{CD}$

$\angle BFA$ is a right \angle

$\angle DEC$ is a right \angle

Prove: $\triangle CDE \cong \triangle ABF$



Statements

Reasons

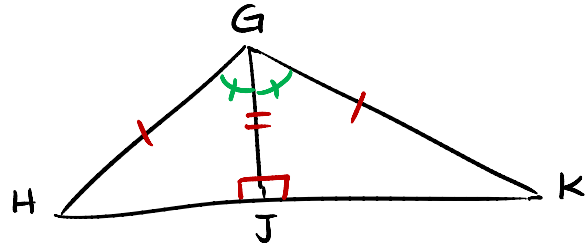
- 1.) $\overline{AE} \cong \overline{CF}$
- 2.) $\overline{AB} \cong \overline{CD}$ [H]
- 3.) $\angle BFA$ is a right \angle
- 4.) $\angle DEC$ is a right \angle
- 5.) $\overline{AF} \cong \overline{EC}$ [Q]
- 6.) $\triangle CDE \cong \triangle ABF$
- 7.) $\triangle CDE \cong \triangle ABF$

- 1.) Given
- 2.) Given
- 3.) Given
- 4.) Given
- 5.) Addition prop
- 6.) HL (3, 4, 2, 5)
- 7.) CPCTC

$\text{If } 2 \cong \text{seg} + \text{seg} \rightarrow \text{Sons} \cong$

#6 Given: $\overline{GH} \cong \overline{GK}$
 \overline{GJ} is an altitude

Prove: \overline{GJ} bisects $\angle HGK$



Statements

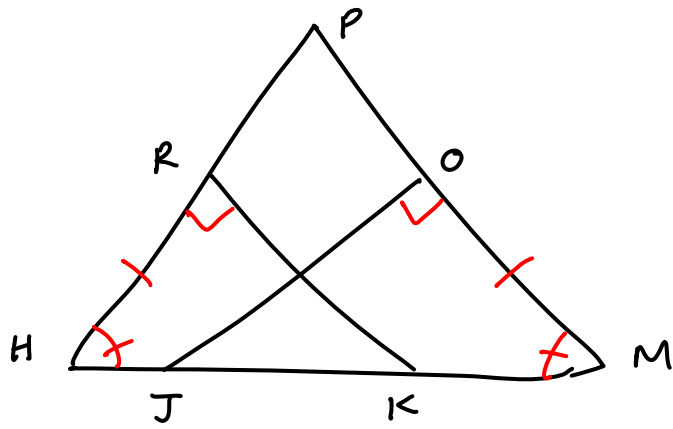
Reasons

- 1.) $\overline{GH} \cong \overline{GK}$ [H]
- 2.) \overline{GJ} is an altitude
- 3.) $\angle GJH$ is a right \angle
- 4.) $\angle GJK$ is a right \angle
- 5.) $\overline{GJ} \cong \overline{GJ}$ [Q]
- 6.) $\triangle GJK \cong \triangle GJH$
- 7.) $\angle HGT \cong \angle KGT$
- 8.) \overline{GJ} bisects $\angle HGK$

- 1.) Given
- 2.) Given
- 3.) An alt. of a \triangle \div the opp. side into 2 \cong segs.
- 4.) Same as 3.
- 5.) Reflexive prop.
- 6.) HL (1, 3, 4, 5)
- 7.) CPCTC
- 8.) If a ray divides an \angle into 2 \cong \angle 's \rightarrow bisects the \angle

#9 GIVEN: $\overline{RK} \perp \overline{HR}$
 $\overline{JO} \perp \overline{PM}$
 $\overline{PH} \cong \overline{PM}$
 $\overline{PR} \cong \overline{PO}$

Conc: $\overline{RK} \cong \overline{JO}$



Statements

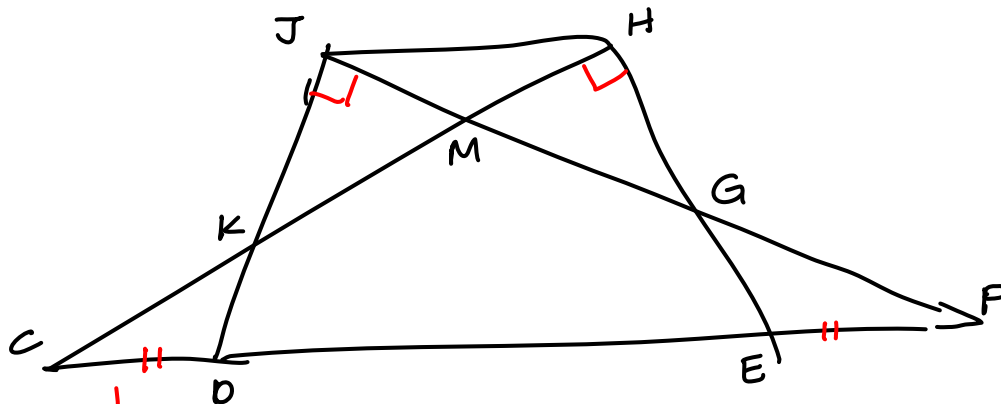
Reasons

1. $\overline{RK} \perp \overline{HR}$
2. $\angle HRK$ is a \angle
3. $\overline{JO} \perp \overline{PM}$
4. $\angle MOR$ is a \angle
5. $\overline{PH} \cong \overline{PM}$
6. $\angle H \cong \angle M$ (A)
7. $\overline{PR} \cong \overline{PO}$
8. $\overline{RH} \cong \overline{OM}$ (S)
9. $\angle HRK \cong \angle MOR$ (A)
10. $\triangle HRK \cong \triangle MOR$
11. $\overline{RK} \cong \overline{JO}$

1. Given
2. If 2 segs are $\perp \rightarrow$ form \angle
3. Given
4. Same as 2
5. Given
6. If $\triangle \rightarrow \triangle$
7. Given
8. If 2 \cong segs are subtracted from 2 \cong segs \rightarrow diffs are \cong
9. If 2 \angle s are \angle s $\rightarrow \angle$ s \cong
10. ASA (6,8,9)
11. CPCTC

#12 $\overline{CD} \cong \overline{EF}$
 $\overline{JF} \perp \overline{JD}$
 $\overline{CH} \perp \overline{HE}$
 $\overline{CH} \cong \overline{JF}$

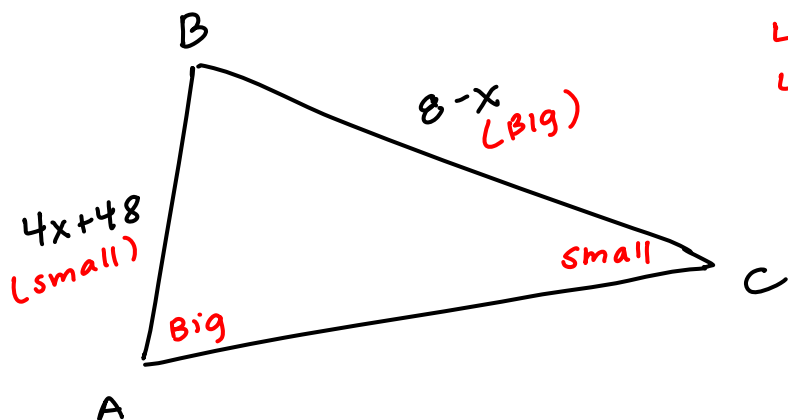
Prove: $\overline{JD} \cong \overline{HE}$



1. $\overline{CD} \cong \overline{EF}$
2. $\overline{JF} \perp \overline{JD}$
3. $\angle DJF$ is a \perp
4. $\overline{CH} \perp \overline{HE}$
5. $\angle CHE$ is a \perp
6. $\overline{CE} \cong \overline{DF}$ [H]
7. $\overline{CH} \cong \overline{JF}$ [L]
8. $\triangle CHE \cong \triangle FJD$
9. $\overline{JD} \cong \overline{HE}$

1. Given
2. Given
3. If 2 segs are $\perp \rightarrow$ form \perp 's
4. Given
5. Same as 3
6. If the same seg is added to \cong segs \rightarrow sums are \cong
7. Given
8. HL (3, 5, 6, 7)
9. CPCTC

#14 Given: $m\angle A > m\angle C$
 Find the restrictions on the value of x .



$$4x + 48 > 0$$

$$4x > -48$$

$$x > -12$$

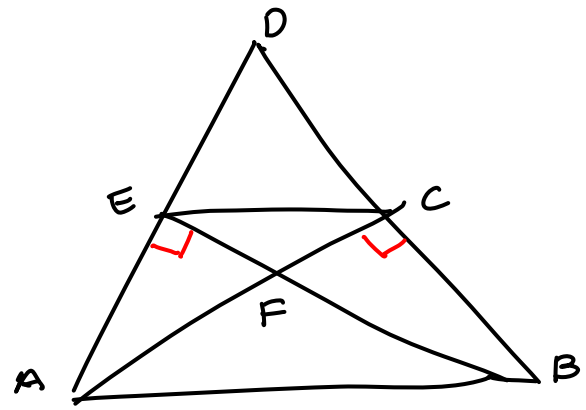
$$8 - x > 4x + 48$$

$$-40 > 5x$$

$$-8 > x$$

$$-12 < x < -8$$

#16 Given: $\overline{BE} \perp \overline{AD}$
 $\overline{AC} \perp \overline{BD}$
 $\overline{AC} \cong \overline{BE}$
 $\overline{DE} \cong \overline{EC}$



Prove: $\triangle DEC$ is equilateral

1. $\overline{BE} \perp \overline{AD}$
2. $\angle AEB$ is a \angle
3. $\overline{AC} \perp \overline{BD}$
4. $\angle ACB$ is a \angle
5. $\overline{AC} \cong \overline{BE}$ (L)
6. $\overline{AB} \cong \overline{AB}$ (H)
7. $\triangle EAB \cong \triangle CBA$
8. $\overline{EA} \cong \overline{CB}$
9. $\angle EAB \cong \angle CBA$
10. $\overline{DA} \cong \overline{DB}$
11. $\overline{DE} \cong \overline{EC}$
12. $\overline{DE} \cong \overline{DC}$
13. $\overline{DE} \cong \overline{EC} \cong \overline{DC}$
14. $\triangle DEC$ is equilateral

1. Given
2. If 2 segs are $\perp \rightarrow$ form a \angle
3. Given
4. Same as 2
5. Given
6. Reflexive prop
7. HL (2, 4, 5, 6)
8. CPCTC
9. CPCTC
10. If $\triangle \rightarrow \triangle$
11. Given
12. If \cong segs are subtracted from \cong segs \rightarrow diffs are \cong
13. Transitive (If 2 segs are \cong to the same seg \rightarrow segs \cong)
14. If all sides of a \triangle are $\cong \rightarrow \triangle$ is equilateral

#18

$A \cong E$ by ASA

$B \cong E$ by CPCTC and HL

$C \cong E$ by CPCTC and SSS

$\therefore A \cong B \cong C \cong E$