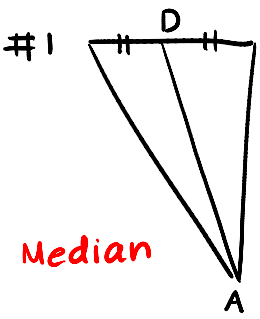
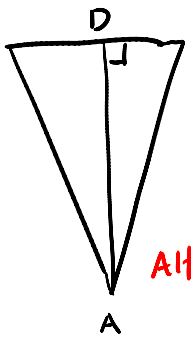
pgs. 135 - 137 #1, 4, 6, 9, 10, 12
Sec 7.2 pg. 304 #5

#1



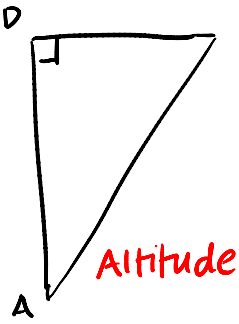
Median

b.



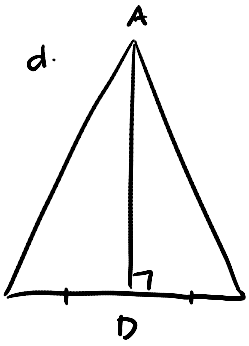
Altitude

c.



Altitude

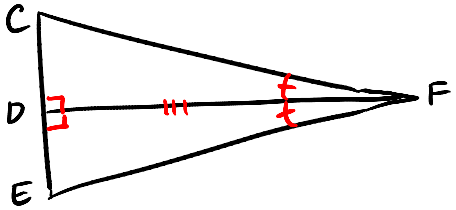
d.



Both

#4 Given: $\angle CFD \cong \angle EFD$
$\overline{FD}$ is an altitude

Prove: $\overline{FD}$ is a median



Statements	Reasons
1) $\angle CFD \cong \angle EFD$	1.) Given
2) $\overline{FD}$ is an altitude	2.) Given
3) $\angle FDC$ is a right $\angle$	3.) If a seg. is an altitude it forms a $\perp$ with the opp. side If Alt → Rt. $\angle$'s
4) $\angle FDE$ is a right $\angle$	4.) Same as 3.
5) $\angle FDC \cong \angle FDE$	5.) If 2 $\angle$s are right $\angle$'s → $\angle$'s $\cong$
6) $\overline{DF} \cong \overline{DF}$	6.) Reflexive property
7) $\triangle FDC \cong \triangle FDE$	7.) ASA (1, 6, 5)
8) $\overline{CD} \cong \overline{DE}$	8.) CPCTC
9.) $\overline{FD}$ is a median	9.) If a seg ÷ opp side into 2 $\cong$ segs → median

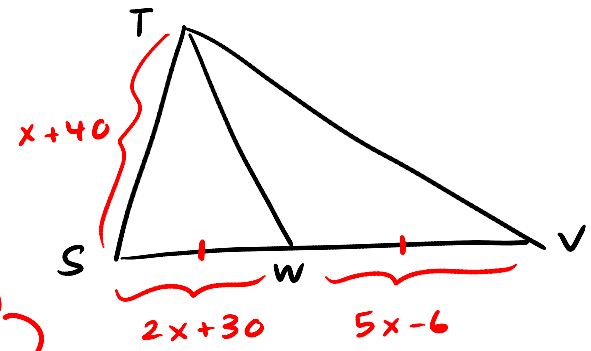
5

#6 $\overline{TW}$ is a median

$ST = x + 40$

$SW = 2x + 30$

$WV = 5x - 6$



Find: SW = 54

WV = 54

ST = 52

$5x - 6 = 2x + 30$

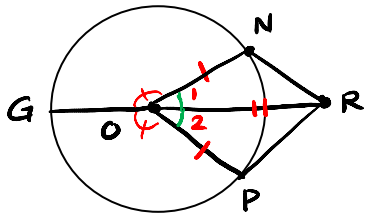
$3x = 36$

$x = 12$

#9 Given: ⊙O

$\angle NOG \cong \angle POG$

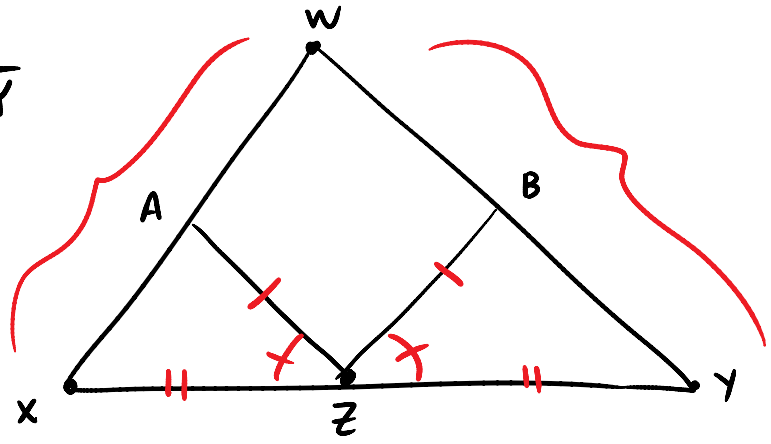
Conclusion: $\overrightarrow{RO}$ bisects $\angle NRP$



Statements	Reasons
1.) ⊙O	1.) Given
2.) $\overline{ON} \cong \overline{OP}$	2.) All radii of a ⊙ are ≅
3.) $\angle NOG \cong \angle POG$	3.) Given
4.) $\angle GOR$ is a straight ∡	4.) Assumed
5.) $\angle NOG$ is supp. to $\angle 1$	5.) If 2 ∡'s form a straight ∡ → ∡'s supp.
6.) $\angle POG$ is supp to $\angle 2$	6.) Same as 5.
7.) $\angle 1 \cong \angle 2$	7.) If 2 ∡'s are supp. to ≅ ∡'s → ∡'s ≅
8.) $\overline{OR} \cong \overline{OR}$	8.) Reflexive property
9.) $\triangle NOR \cong \triangle POR$	9.) SAS (2, 7, 8)
10.) $\angle NRO \cong \angle PRO$	10) CPCTC
11.) $\overrightarrow{RO}$ bisects $\angle NRP$	11.) If a ray divides an ∡ into 2 ≅ → it bisects an ∡

#10 Given: $\overline{AZ} \cong \overline{ZB}$
Z is the midpt of $\overline{XY}$
$\angle AZX \cong \angle BZY$
$\overline{XW} \cong \overline{YW}$

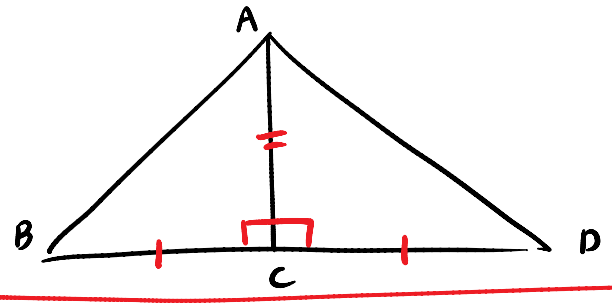
Prove: $\overline{AW} \cong \overline{BW}$



Statements	Reasons
1. $\overline{AZ} \cong \overline{ZB}$ (S)	1. Given
2. Z is the midpt of $\overline{XY}$	2. Given
3. $\overline{XZ} \cong \overline{ZY}$ (S)	3. If a pt is a midpt of a seg → divides the segment into 2 ≅ segs
4. $\angle AZX \cong \angle BZY$ (A)	4. Given
5. $\triangle AZX \cong \triangle BZY$	5. SAS (1, 4, 3)
6. $\overline{AX} \cong \overline{BY}$	6. CPCTC
7. $\overline{XW} \cong \overline{YW}$	7 Given
8. $\overline{AW} \cong \overline{BW}$	8. If 2 ≅ segs are subtracted from 2 ≅ segs → differences are ≅

#12 $\overline{AC}$ is the alt to $\overline{BD}$
$\overline{AC}$ is a median
$\triangle BAC$ is comp. to $\angle D$

Prove: $\angle DAC$ is comp to $\angle B$



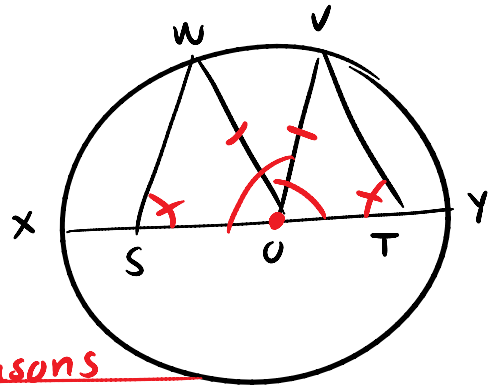
1. $\overline{AC}$ is the alt. to $\overline{BD}$	1. Given
2. $\angle ACB$ and $\angle ACD$ are ⊾'s	2. If a seg is an alt → forms ⊾'s w/ opp side
3. $\angle ACB \cong \angle ACD$ (A)	3. If 2 ∠'s are ⊾'s → ∠'s ≅
4. $\overline{AC}$ is a median	4. Given
5. $\overline{BC} \cong \overline{CD}$ (S)	5. If a seg is a median → divides opp. side into 2 ≅ segs If Median → 2 ≅ Segs
6. $\overline{AC} \cong \overline{AC}$ (S)	6. Reflexive prop
7. $\triangle ACB \cong \triangle ACD$	7. SAS (5, 3, 6)
8. $\angle BAC$ is comp. to $\angle D$	8. Given
9. $\angle BAC \cong \angle DAC$	9. CPCTC
9.5 $\angle B \cong \angle D$	9.5 CPCTC
10. $\angle DAC$ is comp to $\angle B$	10. Substitution

#5 Given: $\odot O$

$\angle SOV \cong \angle TOW$

$\angle WSO \cong \angle VTO$

Prove: $\overline{SO} \cong \overline{TO}$



Statements	Reasons
1. $\odot O$	1. Given
2. $\overline{OW} \cong \overline{OV}$ (S)	2. All radii are $\cong$
3. $\angle SOV \cong \angle TOW$	3. Given
4. $\angle SOW \cong \angle TOV$ (A)	4. If an $\angle$ is subtracted from $\cong$ $\angle$'s → differences are $\cong$
5. $\angle WSO \cong \angle VTO$ (A)	5. Given
6. $\triangle WSO \cong \triangle VTO$	6. AAS (4, 5, 2)
7. $\overline{SO} \cong \overline{TO}$	7. CPCTC