

Geometry Chapter 4 Pre-Test

- 1.) (10 pts each, 60 pts total) Evaluate each of the following triangles. If they are congruent, state which theorem suggests they are congruent (SAS, ASA, SSS, AAS, HL) and write a congruence statement.

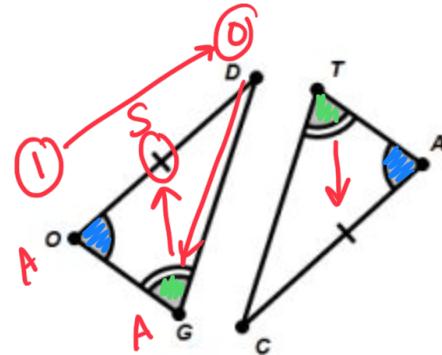
a) Theorem: **AAS**

Triangle Congruence:

$$\begin{aligned} \text{① } & \angle D \cong \angle A \\ \text{② } & \angle G \cong \angle T \\ \text{③ } & \angle D \cong \angle C \end{aligned}$$

$$\Delta DGD \cong \Delta ACT$$

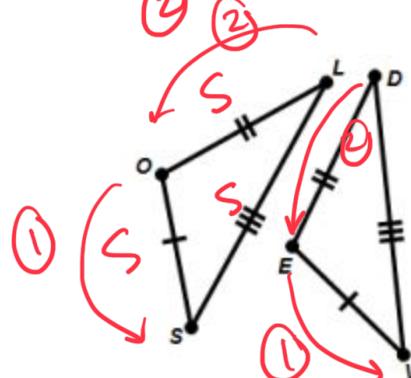
$$\Delta DGD \cong \Delta CAT$$



b) Theorem: **SSS**

Triangle Congruence:

$$\Delta LOS \cong \Delta DEV$$

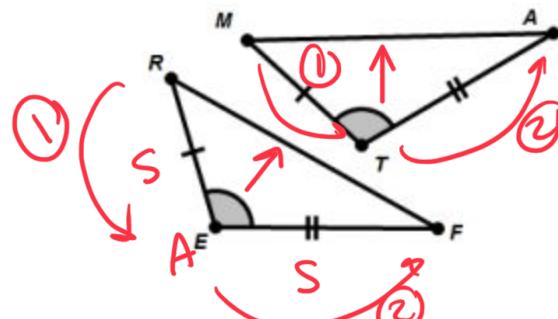


[SSS SAS ASA AAS]

c) Theorem: **SAS**

Triangle Congruence:

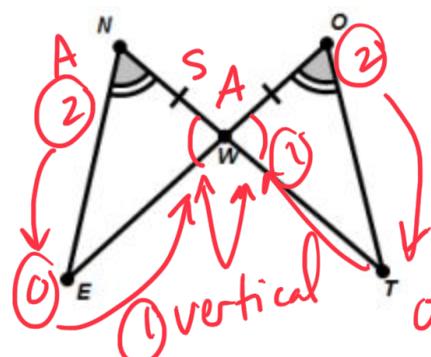
$$\Delta REF \cong \Delta MTA$$



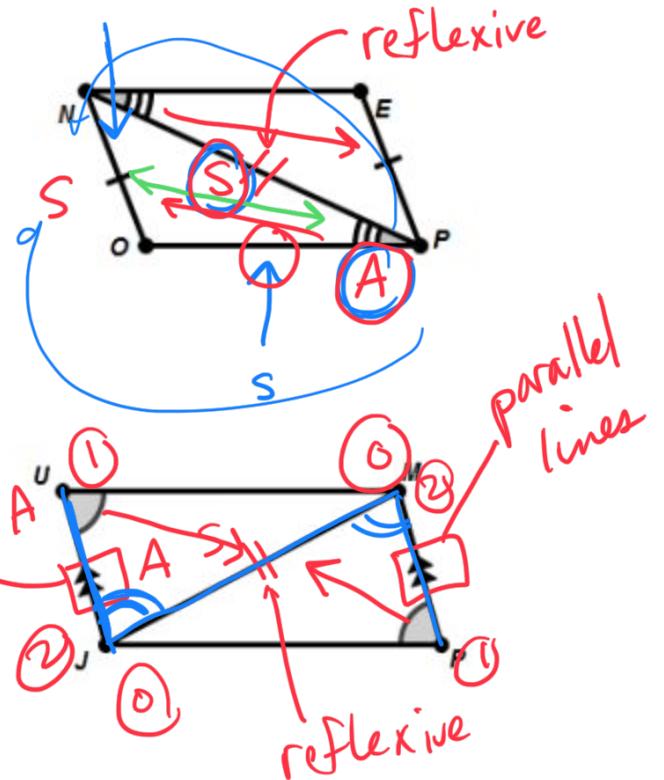
d) Theorem: **ASA**

Triangle Congruence:

$$\Delta NEW \cong \Delta OTW$$



e) Theorem: *Not Congruent*
 Triangle Congruence:



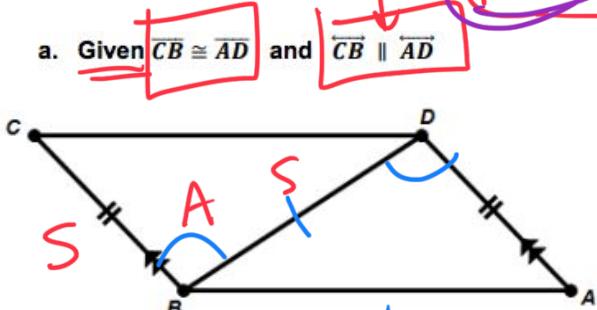
f) Theorem: *AAS*

Triangle Congruence:

$$\triangle UJM \cong \triangle PMJ$$

2.) (10 pts each, 20 pts total) Prove which of the following triangles congruent if possible by filling in the missing blanks:

a) (10 pts)



variable properties

Statements	Reasons
1. $\overline{CB} \cong \overline{AD}$	Given
2. $\overline{CB} \parallel \overline{AD}$	Given
3. $\angle CBD \cong \angle ADB$	Alt Int Angles
4. $\overline{BD} \cong \overline{BD}$	Reflexive
5. $\triangle CBD \cong \triangle ADB$	SAS

SSS
SAS
ASA
AAS

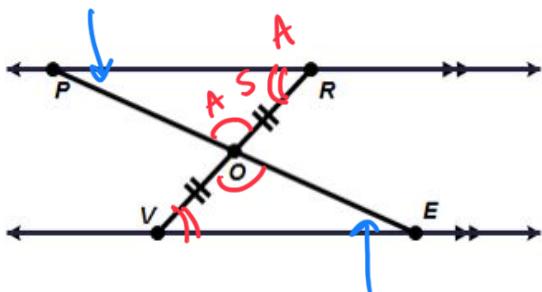
- reflexive \rightarrow Fused triangles
- alternate interior angles $\rightarrow \gg \gg$ parallel lines
- vertical angles $\rightarrow \times$

6. $\overline{CD} \cong \overline{AB}$ CPCTC

b) (10 pts)

No "Prove"

c. Given $\overline{VO} \cong \overline{RO}$ and $\overline{PR} \parallel \overline{VE}$

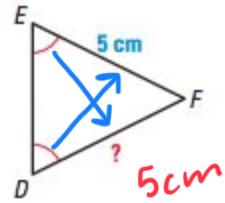


Statements	Reasons
1. $\overline{VO} \cong \overline{RO}$	Given
2. $\overline{PR} \parallel \overline{VE}$	Given
3. $\angle P O R \cong \angle E O V$	vertical angles
4. $\angle P R O \cong \angle E V O$	Alt. Int. angles
5. $\triangle PRO \cong \triangle EVO$	ASA

CPCTC

3.) (5 pts each, 20 pts total) Find the missing measurement or variable(s).

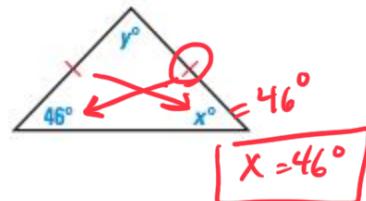
a) ? =



b) $x =$
 $y =$

$$180 = \underbrace{46 + 46}_{} + y$$

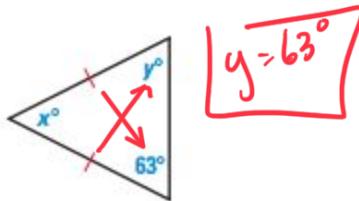
$$\begin{aligned} 180 &= 92 + y \\ -92 &- 92 \\ y &= 88^\circ \end{aligned}$$



c) $x =$
 $y =$

$$180 = \underbrace{63 + 63}_{} + x$$

$$\begin{aligned} 180 &= 126 + x \\ -126 &- 126 \\ x &= 54^\circ \end{aligned}$$



d) $x =$
 $y =$

$$180 = 75 + \underbrace{x + x}_{} + x$$

$$\begin{aligned} 180 &= 75 + 2x + x \\ -75 &- 75 \\ \frac{105}{2} &= \frac{2x}{2} \\ x &= 52.5^\circ \end{aligned}$$

