$$180° = x + \boxed{y} + 38$$

$$180° = x + \boxed{x} + 38$$

$$180 = 2x + 38$$
$$-38 \qquad -38$$

$$\frac{142}{2} = \frac{2x}{2} \qquad \boxed{y = 71}$$

$$\boxed{71 = x}$$

$$\boxed{x = y}$$

Two equal sides

isosceles

1.)
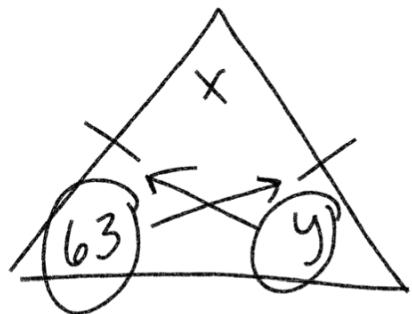
$$\boxed{y = 63} \qquad \boxed{x = 54}$$

$$180 = x + y + 63$$

$$180 = x + 63 + 63$$

$$180 = x + 126$$
$$-126 \qquad -126$$

$$\boxed{54 = x}$$

2.)
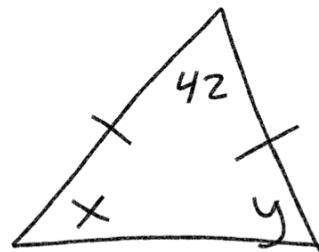
$$x = y$$

$$180 = 42 + x + y$$

$$180 = 42 + x + x$$

$$180 = 42 + 2x$$
$$-42 \qquad -42$$

$$\frac{138}{2} = \frac{2x}{2} \qquad \boxed{x = 69}$$

$$\boxed{y = 69}$$

Name_____ ID: 1

Assignment

Date_____ Period____

Find the value of *x*.

1)

67°   67

44°

x

Linear pairs

$180 = X + 44$
$-44 \quad -44$

$\boxed{X = 136}$

$180 - (67+67)$
$180 - 134$
46

$44°$ 46

$90 - 46 = 44$

2)

70°

70°

40°

50°

x

$180 - (70+70)$
$180 - 140 = 40$

Linear pair

$180 - 50 =$
$\boxed{130 = X}$

$90 - 40 = 50°$

3)

vertical angles

60°

x x

60°

120°

Linear
$180 - 120$
60

60°

x

$180 - (60+60)$
$180 - 120$
60

Equilateral triangle

4)

$180 - (73+73)$
$180 - 146 = 34$

$90 - 34 = 56°$

34°   56°

56°

$180 - 107$ 73°

Linear pair

x

107°   73

$180 - (56 + 56)$
$180 - 112$
$68°$

$\boxed{X = 68°}$

5)

132°

48

48°

48°

Linear pair
$180 - 132$
48

$90 = 48 + X$
$-48 \; -48$
$\boxed{42 = X}$

x

6)

72°

x
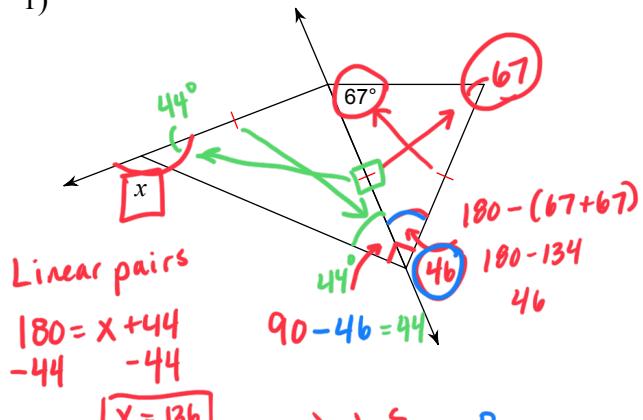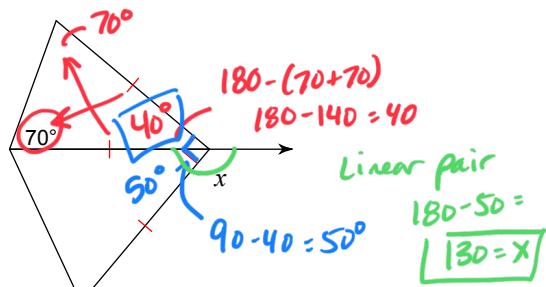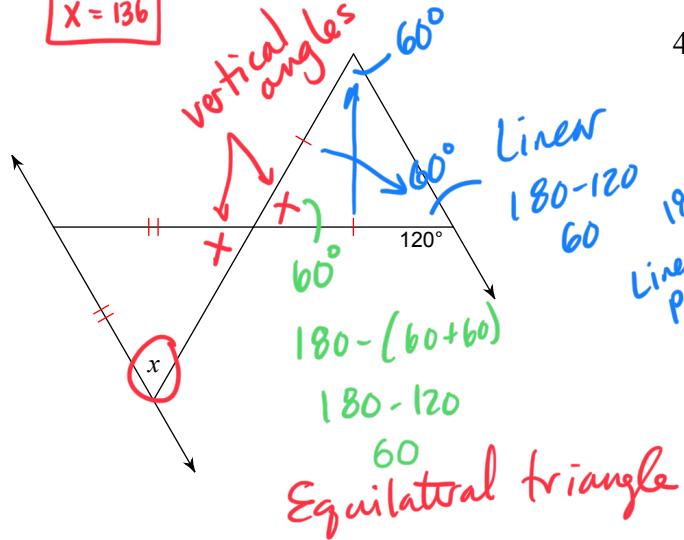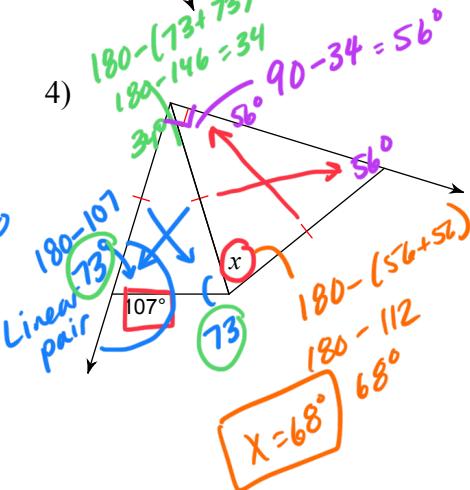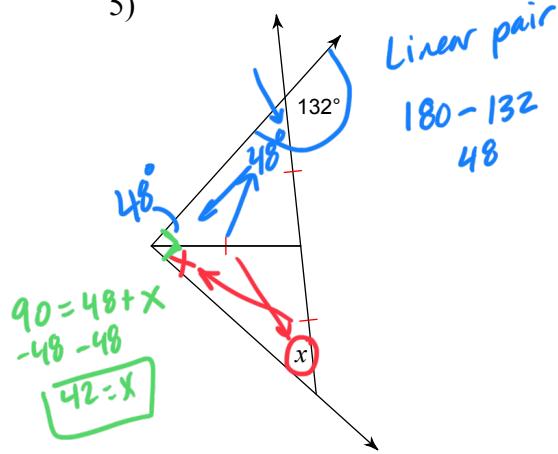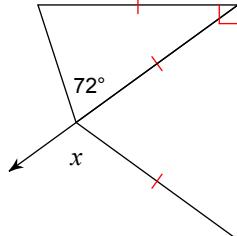
Geometry Chapter 4 Pre-Test

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** (7pts) (3pts)

Triangle Congruence:

$$\triangle DOG \cong \triangle CAT$$
$$\triangle OGD \cong \triangle ATC$$
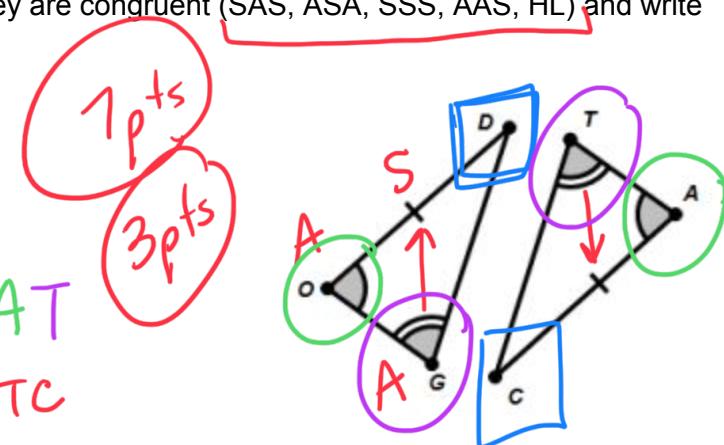
b) Theorem: **SSS**

Triangle Congruence:

$$\triangle SOL \cong \triangle VED$$
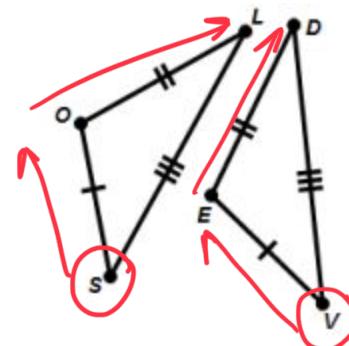
c) Theorem: **SAS**

Triangle Congruence:

$$\triangle REF \cong \triangle MTA$$

A   S
A   S

d) Theorem:

Triangle Congruence:

N A
   S A
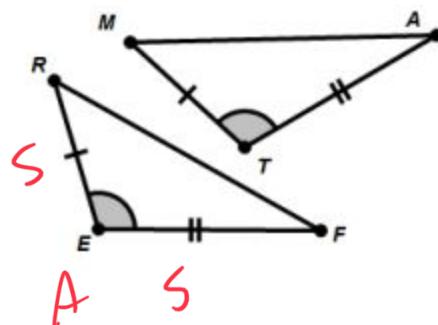
vertical
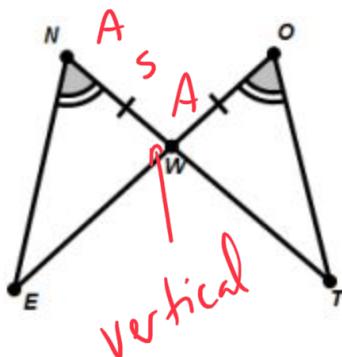
(handwritten annotations at top left) Alt. Int. Vertical Reflexive

e)   Theorem: ~~SAS~~   *(handwritten)* Not congruent

Triangle Congruence:

(handwritten over figure) Reflexive, S, A
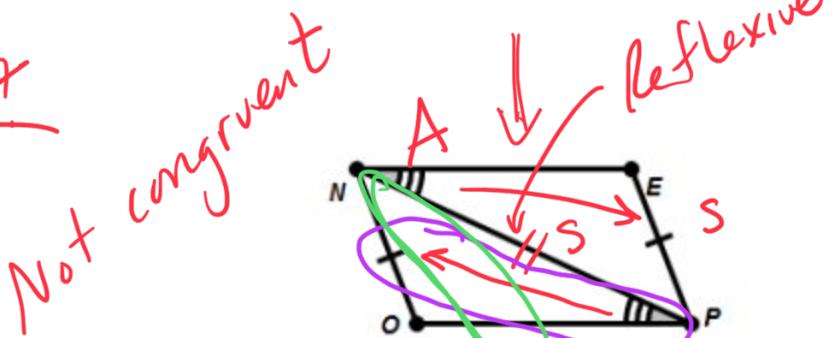
f)   Theorem:

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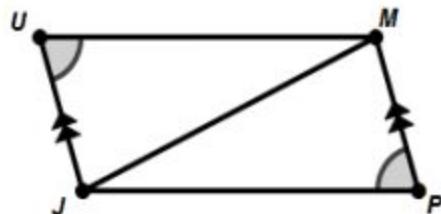
2.) (10 pts each, 20 pts total) Prove which of the following triangles congruent if possible by filling in the missing blanks:

a)   (10 pts)

(handwritten) prove $\overline{CD} \cong \overline{AB}$

a.   Given $\overline{CB} \cong \overline{AD}$ and $\overleftrightarrow{CB} \parallel \overleftrightarrow{AD}$

(handwritten at left) Alt. Int. Angles, Reflexive, Vertical, S, A, S

(handwritten) Triangle congruencies SSS, SAS, ASA, AAS
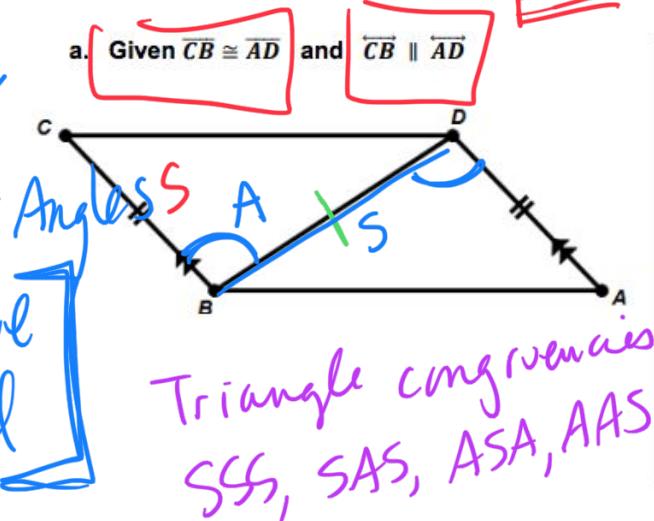
Statements	Reasons
1. $\overline{CB} \cong \overline{AD}$	Given
2. $\overleftrightarrow{CB} \parallel \overleftrightarrow{AD}$	Given
3. $\angle CBD \cong \angle ADB$	Alt. Int. Angles
4. $\overline{BD} \cong \overline{BD}$	Reflexive
5. $\triangle BCD \cong \triangle DAB$	SAS

(handwritten) b.) $\overline{CD} \cong \overline{AB}$ CPCTC

2

b) (10 pts)

c. Given $\overline{VO} \cong \overline{RO}$ and $\overrightarrow{PR} \parallel \overrightarrow{VE}$
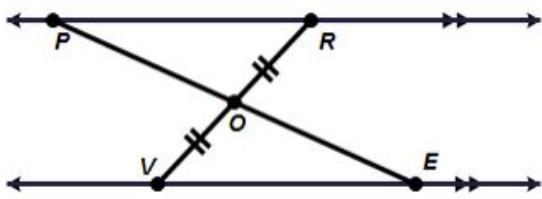
Statements	Reasons
1.	Given
2.	Given
3.	
4.	
5. $\triangle PRO \cong \triangle EVO$	

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

a) ? =

b) x =
   y =

c) x =
   y =

d) x =
   y =

3