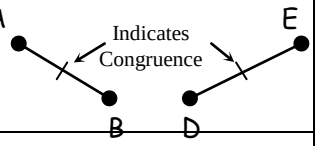
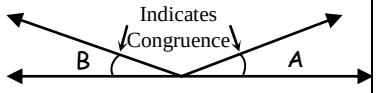
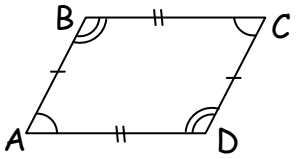
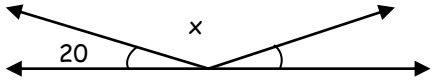
Name:_____ Date:_____

Topic: Congruence

Congruence refers to two measurements that have the same value.

Term	Definition	Description
Congruent segments	segments that are the same length	$AB \cong DE$ 
Congruent angles	angles that have the same measure	$\angle B \cong \angle A$ 
Congruent polygons	polygon whose corresponding angles and corresponding sides are congruent	$AB \cong CD$ $AD \cong BC$ $\angle A \cong \angle C$ $\angle B \cong \angle D$ 

Example: Solve for x.



Step 1: Begin with what you know

Two angles are congruent

One of the congruent angles is 20 degrees

A straight line is 180 degrees

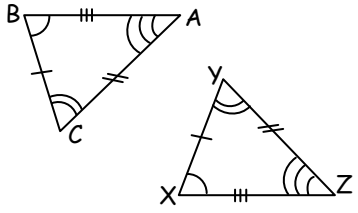
Step 2: Solve for what you don't know:

$20 + 20 = 180 - x$

$x = 180 - (20 + 20)$

$x = 140$

Note: When writing a congruence statement, the order of letters indicates which angles and line segments corresponding to one another.



Example: Write a congruence statement.

$\angle A \cong \angle Z$; $\angle B \cong \angle X$; and $\angle C \cong \angle Y$

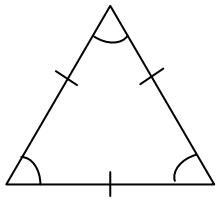
$\Delta ABC \cong \Delta ZXY$ is the only correct way to write it.

$\Delta ABC \cong \Delta XYZ$ is **incorrect**.

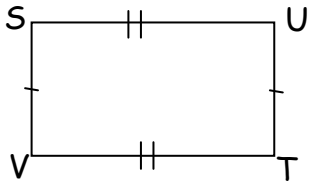
Name:_____ Date:_____

Practice. Write a congruence statement.

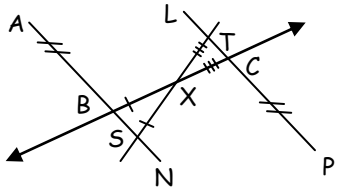
1. ΔMNO



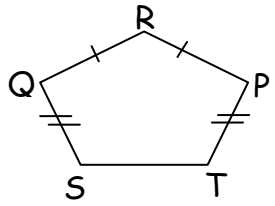
2.



3.

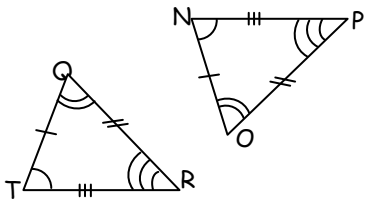


4.

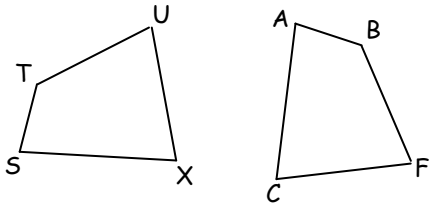


5-6. Fill in the blank.

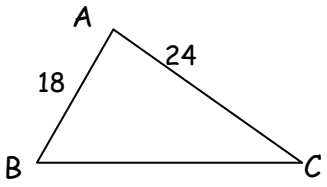
5. Δ_____ ≅ Δ_____



6. Polygon _____ ≅ Polygon _____



7-10. Solve for x.



7. ΔQWR ≅ ΔACB
   RQ = 2x

8. ΔCAB ≅ ΔJKO
   JK = 3x

9. ΔACB ≅ ΔTNK
   NT = $\frac{1}{2}$x + 6

10. ΔCBA ≅ ΔPEI
    EI = 2x + 12

Name:_____ Date:_____

Answer Key

Topic: Congruence

1. $MN \cong NO \cong MO$; $\angle M \cong \angle N \cong \angle O$
2. $SU \cong VT$; $SV \cong UT$
3. $AN \cong LP$; $SX \cong BX$; $CX \cong TX$ ($ST \cong BC$)
4. $QS \cong PT$; $QR \cong RP$
5. Answers will vary. $NOP \cong TQR$
6. Answers will vary. $STUX \cong ABCF$
7. $x = 9$
8. $x = 8$
9. $x = 36$
10. $x = 3$