

# KEY

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd: \_\_\_\_\_

## Unit 2 Test Review

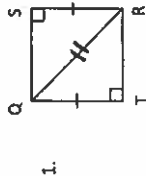
### Congruent Figures

List all congruent sides and angles for the given statements.

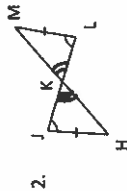
1.  $\triangle ABC \cong \triangle DEF$

2.  $\triangle COW \cong \triangle MAT$

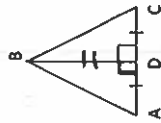
**Congruent Triangles** For each pair of triangles give the reason for congruency. If they cannot be proved congruent put **NOT**



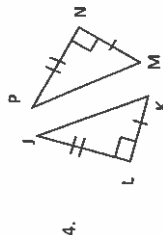
HL



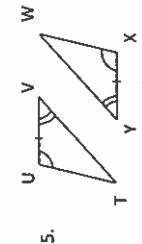
ASA



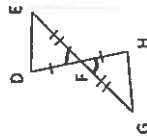
SAS



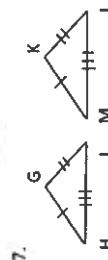
SAS



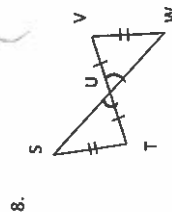
ASA



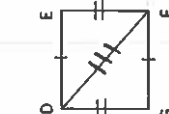
SAS



SSS



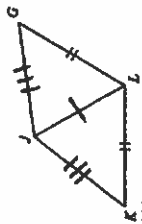
NOT



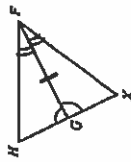
SSS

**Congruent Triangles** Each pair of triangles is missing information. State what additional piece of information would be needed to prove the triangles are congruent by the reason listed.

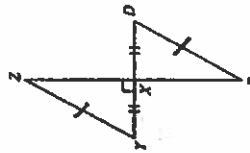
1. SSS



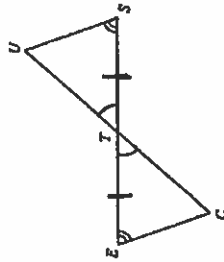
2. ASA



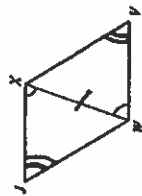
3. HL



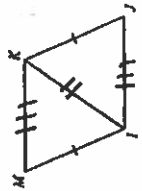
4. ASA



5. AAS



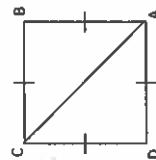
6. SSS



### Congruency Statements

Write all congruent parts. Identify any "hidden" parts as well. Give the congruency theorem

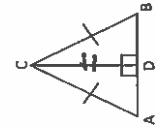
1.  $\triangle ABC \cong \triangle CDA$



SSS

2.  $\triangle ADC \cong \triangle BDC$

HL

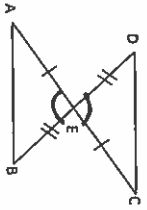


$\overline{CD} \cong \overline{CD}$   
 $\overline{DA} \cong \overline{BC}$   
 $\overline{CA} \cong \overline{CB}$

$\angle ADC \cong \angle BDC$   
 $\overline{CD} \cong \overline{CD}$   
 $\overline{AC} \cong \overline{BC}$

3.  $\triangle ABE \cong \triangle CDE$

SAS



$DE \cong BE$   
 $AE \cong CE$   
 $\angle DEC \cong \angle BEA$

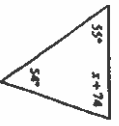
Vocabulary

1. If two angles form a linear pair, then they are supplementary.
2. If two angles are vertical angles, then they are congruent.
3. The sum of the angles in a triangle is equal to  $180^\circ$ .
4. Exterior Angles Theorem: The exterior angle of a triangle is equal to the sum of its two interior angles.
5. Isosceles Triangle Theorem: If two sides of a triangle are congruent, then two sides are congruent and angles are congruent.
6. Converse of the Isosceles Triangle Theorem: If two angles of a triangle are congruent, then two sides are congruent.
7. If two lines are parallel, then the corresponding angles are congruent.
8. If two lines are parallel, then the alternate interior angles are congruent.
9. If two lines are parallel, then the same-side exterior angles are supplementary.
10. If two lines are parallel, then the same-side interior angles are supplementary.
11. If two lines are parallel, then the alternate exterior angles are congruent.

Triangle Sum Theorem

Solve each of the following triangles for x.

1.  $x = -3$

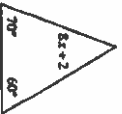


$55 + 54 + x + 74 = 180$

$183 + x = 180$

$x = -3$

2.  $x = 10$



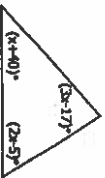
$70 + 60 + 6x + 2 = 180$

$132 + 6x = 180$

$6x = 48$

$x = 10$

3.  $x = 27$



$x + 40 + 3x - 17 + 2x - 5 = 180$

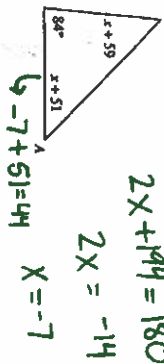
$6x + 18 = 180$

$6x = 162$

$x = 27$

For each of the triangles below, solve for x and state the measure of angle A.

4.  $x = -7$   
 $m\angle A = 44^\circ$

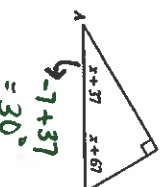


$2x + 114 = 180$

$2x = -14$

$x = -7$

5.  $x = -7$   
 $m\angle A = 30^\circ$



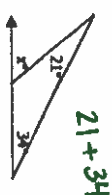
$2x + 104 = 180$

$2x = -14$

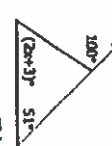
$x = -7$

Exterior Angle Theorem

1.  $x = 55^\circ$



2.  $x = 23$



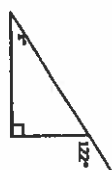
$2x + 3 + 51 = 100$

$2x + 54 = 100$

$2x = 46$

$x = 23$

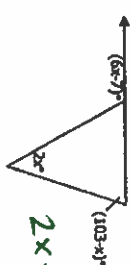
3.  $x = 32$



$x + 90 = 122$

$x = 32$

4.  $x = 22$



$2x + 103 - x = 6x - 7$

$x + 103 = 6x - 7$

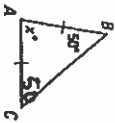
$110 = 5x$

$x = 22$

Isosceles Triangle Theorem

For each of the following questions, find the requested information:

1.  $x = 80^\circ$



2.  $x = 45^\circ$

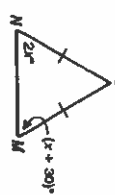


$2x + x + x = 180$

$4x = 180$

$x = 45$

3.  $m\angle M = 100^\circ$

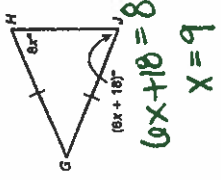


$2x = x + 30$

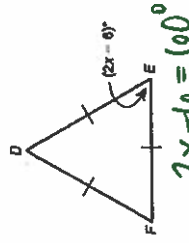
$x = 30$

$m\angle M = 30 + 30 = 60^\circ$

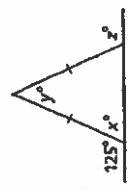
4.  $m < H = 72^\circ$



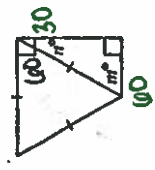
5.  $x = 33$



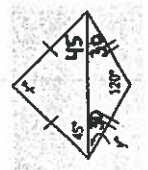
7.  $x = 55^\circ$ ,  $y = 70^\circ$ ,  $z = 125^\circ$



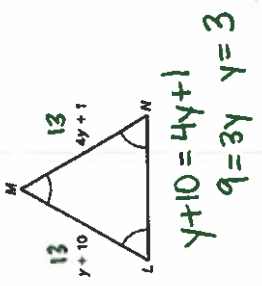
8.  $m = 60^\circ$ ,  $n = 30^\circ$



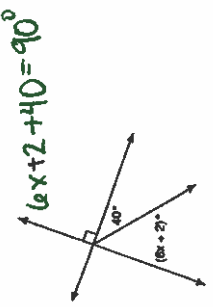
9.  $x = 90^\circ$ ,  $y = 30^\circ$



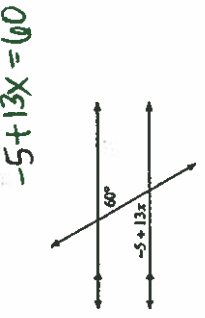
6.  $MN = 13$



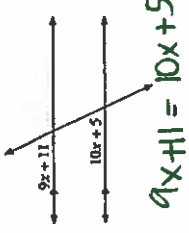
4. Type of Angles: **Complementary** ( $= 90^\circ$ )  
 $x = 8$



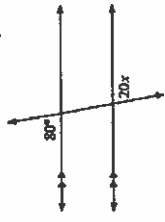
5. Type of Angles: **A.H. Interior**  
 $x = 5$



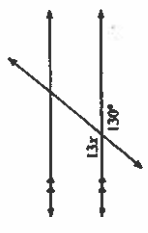
6. Type of Angles: **Corresponding**  
 $x = 6$



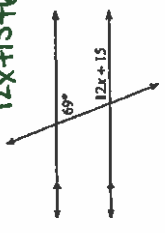
7. Type of Angles: **A.H. Exterior**  
 $x = 4$



8. Type of Angles: **Vertical**  
 $x = 10$



9. Type of Angles: **S.S. Interior**  
 $x = 8$

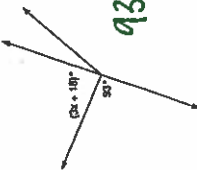


**Parallel Lines and Angle Relationships**

For each of the following, state the angle relationships and then find the missing value:

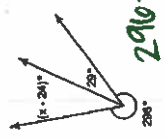
1. Type of Angles: **Supplementary**

$x = 23$



3. Type of Angles: **No type**

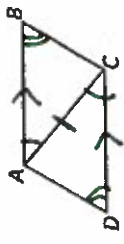
$x = 59$



1. Fill in the missing statements and reasons.

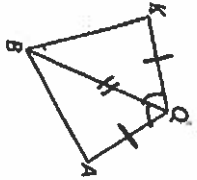
Given:  $AB \parallel DC$ ,  $\angle B \cong \angle D$   
Prove:  $BC \cong DA$

Statements	Reasons
1. $AB \parallel DC$	1. Given
2. $\angle BAC \cong \angle DCA$	2. <b>A.H. Interior angles</b>
3. $\angle B \cong \angle D$	3. Given
4. $AC \cong AC$	4. <b>Reflexive property</b>
5. $\triangle ABC \cong \triangle CDA$	5. <b>AAS</b> Congruence Theorem
6. $BC \cong DA$	6. <b>CPCTC</b>



2. Complete the two-column proof.

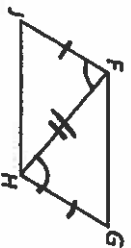
Given:  $OK \cong OA$ ,  $OB$  bisects  $\angle KOA$   
 Prove:  $KB \cong AB$



Statements	Reasons
1. $OK \cong OA$	1. Given
2. $OB$ bisects $\angle KOA$	2. Given
3. $\angle KOB \cong \angle AOB$	3. Definition of Bisector
4. $OB \cong OB$	4. Reflexive Property of Congruence
5. $\triangle KOB \cong \triangle AOB$	5. SAS Congruence Postulate
6. $KB \cong AB$	6. CPCTC

4. Complete the two-column proof.

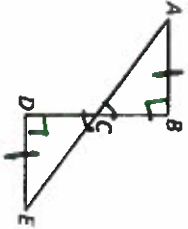
Given:  $FJ \cong GH$ ,  $\angle JFH \cong \angle GHF$   
 Prove:  $FG \cong JH$



Statements	Reasons
1. $FJ \cong GH$	1. Given
2. $\angle JFH \cong \angle GHF$	2. Given
3. $FH \cong FH$	3. Reflexive Property
4. $\triangle FJH \cong \triangle HGF$	4. SAS Congruence Theorem
5. $FG \cong JH$	5. CPCTC

3. Fill in the missing statements and reasons.

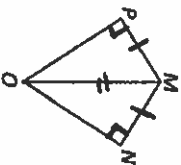
Given:  $BD \perp AB$ ,  $BD \perp DE$ ,  $AB \cong DE$   
 Prove:  $\angle A \cong \angle E$



Statements	Reasons
1. $BD \perp AB$ , $BD \perp DE$	1. Given
2. $\angle B$ & $\angle D$ are right angles	2. Definition of perpendicular
3. $\angle B \cong \angle D$	3. All right angles are congruent
4. $\angle BCA \cong \angle ECD$	4. Vertical Angles
5. $AB \cong DE$	5. Given
6. $\triangle ABC \cong \triangle EDC$	6. ASA Congruence Theorem
7. $\angle A \cong \angle E$	7. CPCTC

5. Fill in the missing statements and reasons.

Given:  $MN \cong MP$ ,  $MP \perp PQ$ ,  $MN \perp NO$   
 Prove:  $\angle NOM \cong \angle POM$



Statements	Reasons
1. $MP \perp PQ$ , $MN \perp NO$	1. Given
2. $\angle P$ and $\angle N$ are right angles	2. Definition of Perpendicular
3. $\triangle MPO$ & $\triangle MNO$ are right $\triangle$ 's	3. Definition of Right Triangle
4. $MN \cong MP$	4. Given
5. $MO \cong MO$	5. Reflexive Property
6. $\triangle MPO \cong \triangle MNO$	6. HL Congruence Theorem
7. $\angle NOM \cong \angle POM$	7. CPCTC