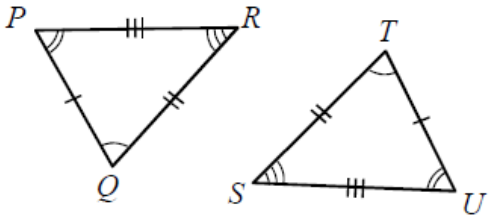
Unit 4 Test Study Guide
(Congruent Triangles)

Name: _____

Date:_____ Period: _____

Topic 1: Congruent Figures

1. Write three different, valid congruency statements for the given triangles.



a) _____

b) _____

c) _____

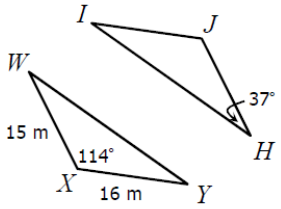
2. If $\Delta KPL \cong \Delta ACM$, complete each part.

a) $\overline{KL} \cong$_____ **d)** $\angle P \cong$_____

b) $\overline{AC} \cong$_____ **e)** $\angle K \cong$_____

c) $\overline{PL} \cong$_____ **f)** $\angle M \cong$_____

3. If $\Delta WXY \cong \Delta HJI$, complete each part.



a) $JI =$_____

b) $JH =$_____

c) $m\angle W =$_____

d) $m\angle J =$_____

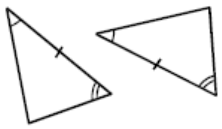
e) $m\angle I =$_____

Topic 2: Triangle Congruence and Proofs

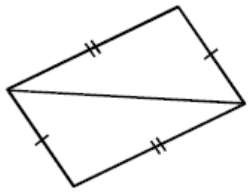
4. What are the different methods (shortcuts) used to prove that triangles are congruent?

5. Determine if the triangles below are congruent. If yes, state by which method (shortcut). Explain what marks you can add to the diagram and why.

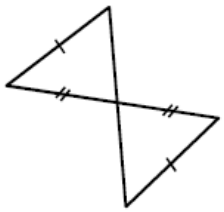
a)



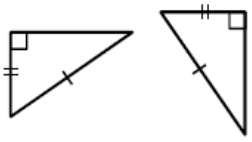
b)



c)

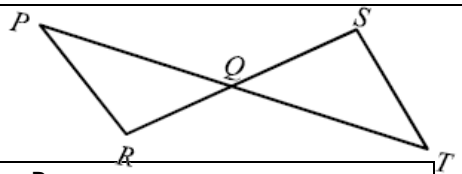


d)



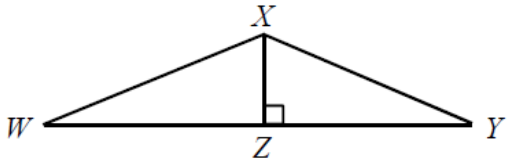
Complete the following proofs. Some may require CPCTC.

6. **Given:** Q *is the midpoint of* $\overline{PT}$ *and* $\overline{RS}$
Prove: $\Delta PQR \cong \Delta TQS$



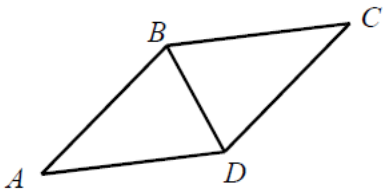
Statements	Reasons
1. Q *is the midpoint of* $\overline{PT}$ *and* $\overline{RS}$	1.
2. $\overline{PQ} \cong \overline{TQ}$	2.
3. $\overline{RQ} \cong \overline{SQ}$	3.
4. $\angle RQP \cong \angle SQT$	4.
5. $\Delta PQR \cong \Delta TQS$	5.

7. **Given:** $\overline{XZ} \perp \overline{WY}, \overline{WX} \cong \overline{YX}$
Prove: $\Delta WXZ \cong \Delta YXZ$



Statements	Reasons
1. $\overline{XZ} \perp \overline{WY}$	1.
2. $\angle XZW$ and $\angle XZY$ are right angles	2.
3. $\angle XZW \cong \angle XZY$	3.
4. $\overline{WX} \cong \overline{YX}$	4.
5. $\overline{XZ} \cong \overline{XZ}$	5.
6. $\Delta WXZ \cong \Delta YXZ$	6.

8. **Given:** $\overline{BC} \parallel \overline{AD}, \angle BAD \cong \angle DCB$
Prove: $\overline{AB} \cong \overline{CD}$

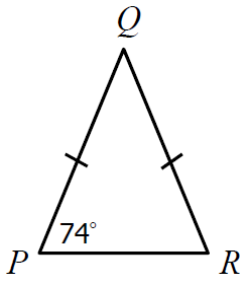


Statements	Reasons
1. $\overline{BC} \parallel \overline{AD}$	1.
2. $\angle CBD \cong \angle ADB$	2.
3. $\angle BAD \cong \angle DCB$	3.
4. $\overline{BD} \cong \overline{DB}$	4.
5. $\Delta BDA \cong \Delta DBC$	5.
6. $\overline{AB} \cong \overline{CD}$	6.

Topic 3: Isosceles & Equilateral Triangles

For questions 9-12, find each missing measure.

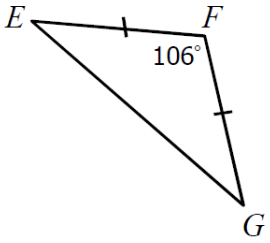
9.



$m\angle Q =$_____

$m\angle R =$_____

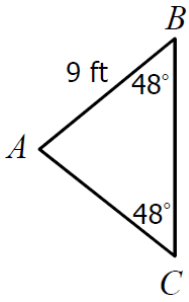
10.



$m\angle E =$_____

$m\angle G =$_____

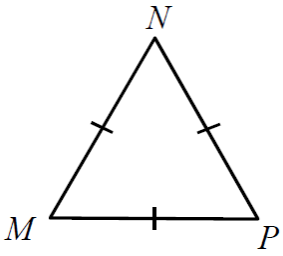
11.



$m\angle A =$_____

$AC =$_____

12.



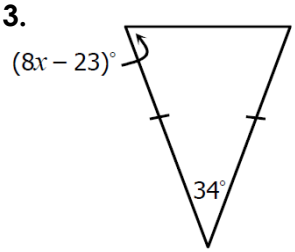
$m\angle M =$_____

$m\angle N =$_____

$m\angle P =$_____

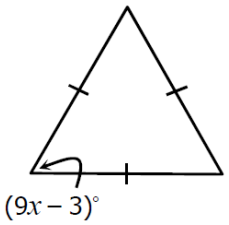
For questions 13 and 14, find the value of x.

13.



$x =$_____

14.



$x =$_____

15. ΔCDE is an isosceles triangle with $\angle D \cong \angle E$. If $CD = 4x + 9, DE = 7x - 5, and\ CE = 16x - 27$, find x and the measure of each side.

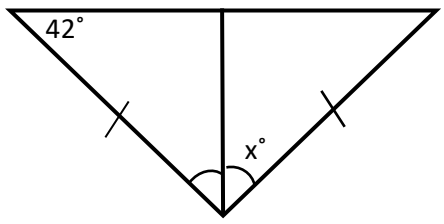
$x =$_____

$CD =$_____

$DE =$_____

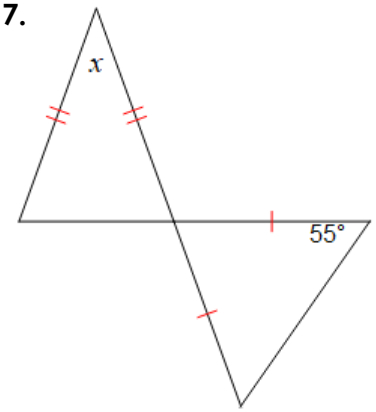
$CE =$_____

16.



$x =$_____

17.



x=_____