

Congruence and Triangles

Name: _____
 Per: _____

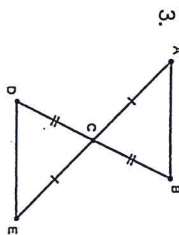
1. Given $\triangle ABE \cong \triangle OUY$. Name the corresponding part for each of the following:

- a. $\angle B \cong$ _____
- b. $\angle O \cong$ _____
- c. $\overline{OY} \cong$ _____
- d. $\overline{EI} \cong$ _____

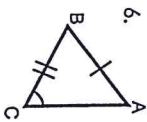
2. Given $\triangle DEF \cong \triangle RST$. Name the corresponding part for each of the following:

- a. $\angle F \cong$ _____
- b. $\angle S \cong$ _____
- c. $\overline{DF} \cong$ _____
- d. $\overline{TR} \cong$ _____

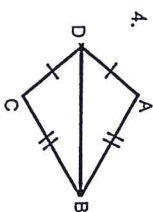
Determine whether the following triangles are congruent. State yes or no. If yes, state the appropriate congruence postulate/theorem shortcut and write the congruence statement.



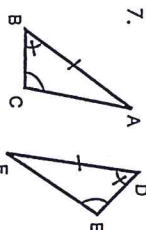
3. Congruent? _____
 Reason _____
 Statement: $\triangle ABC \cong$ _____



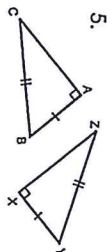
6. Congruent? _____
 Reason _____
 Statement: $\triangle ABC \cong$ _____



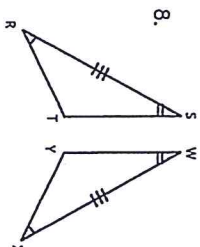
4. Congruent? _____
 Reason _____
 Statement: $\triangle ABD \cong$ _____



7. Congruent? _____
 Reason _____
 Statement: $\triangle ABC \cong$ _____



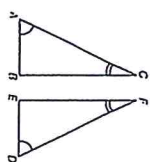
5. Congruent? _____
 Reason _____
 Statement: $\triangle ZXY \cong$ _____



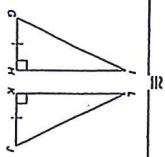
8. Congruent? _____
 Reason _____
 Statement: $\triangle RST \cong$ _____

For questions 9 -13, what additional, corresponding parts are needed to prove the triangles congruent by the indicated method?

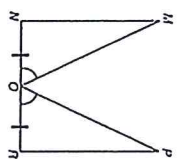
9. $\triangle ABC \cong \triangle DEF$ by AAS



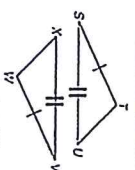
11. $\triangle GHI \cong \triangle JKL$ by SAS



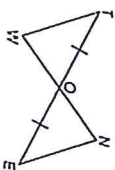
10. $\triangle MNO \cong \triangle PRO$ by SAS



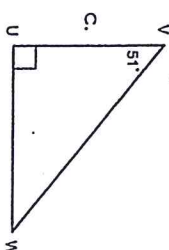
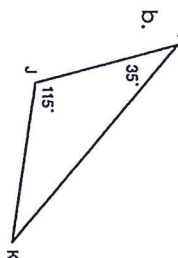
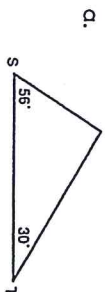
12. $\triangle STU \cong \triangle VWX$ by SSS



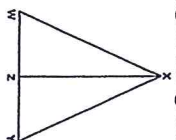
13. $\triangle ONE \cong \triangle QWT$ by ASA



14. Find the missing angle and classify the triangle as acute, obtuse, or right.



15. Given $WZ = YZ$ and $\angle XZW \cong \angle XZY$. By what method are the triangles congruent? Explain your reasoning.



Congruence and triangles

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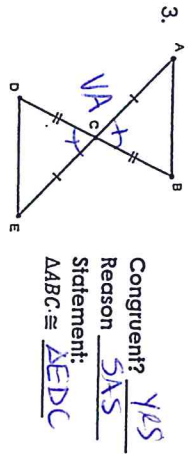
1. Given $\triangle ABE \cong \triangle OUY$. Name the corresponding part for each of the following:

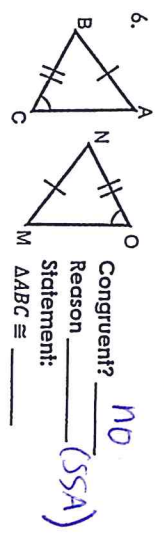
- a. $\angle B \cong \angle U$
- b. $\angle O \cong \angle A$
- c. $\overline{OY} \cong \overline{AI}$
- d. $\overline{EI} \cong \overline{UY}$

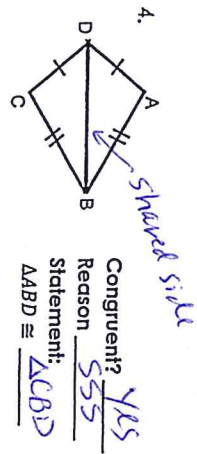
2. Given $\triangle DEF \cong \triangle RST$. Name the corresponding part for each of the following:

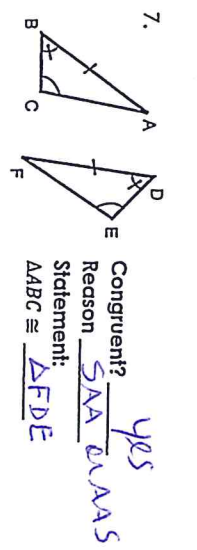
- a. $\angle F \cong \angle R$
- b. $\angle S \cong \angle E$
- c. $\overline{DE} \cong \overline{RS}$
- d. $\overline{TR} \cong \overline{FD}$

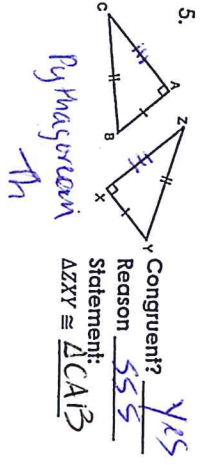
Determine whether the following triangles are congruent. State yes or no. If yes, state the appropriate congruence postulate/theorem shortcut and write the congruence statement.

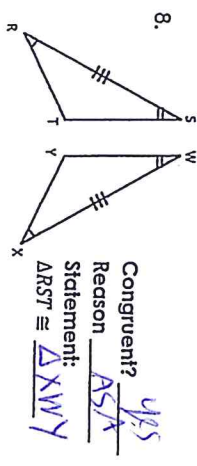
3. 
 Congruent? YES
 Reason SAS
 Statement: $\triangle ABC \cong \triangle EDC$

6. 
 Congruent? NO
 Reason (SSA)
 Statement: $\triangle ABC \cong \triangle MNO$

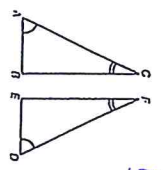
4. 
 Congruent? YES
 Reason SSS
 Statement: $\triangle ABD \cong \triangle CBD$

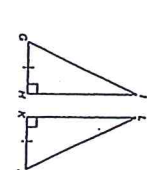
7. 
 Congruent? YES
 Reason SAA or AAS
 Statement: $\triangle ABC \cong \triangle FDE$

5. 
 Congruent? YES
 Reason SSS
 Statement: $\triangle ACB \cong \triangle ZYX$
Pythagorean Th

8. 
 Congruent? YES
 Reason ASA
 Statement: $\triangle RST \cong \triangle XWY$

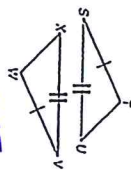
For questions 9 -13, what additional, corresponding parts are needed to prove the triangles congruent by the indicated method?

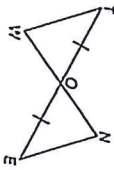
9. $\triangle ABC \cong \triangle DEF$ by AAS

CB \cong DE
AB \cong DE

11. $\triangle GHI \cong \triangle JKL$ by SAS

IH \cong LK

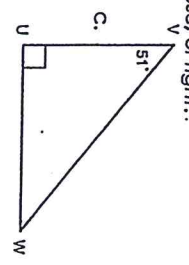
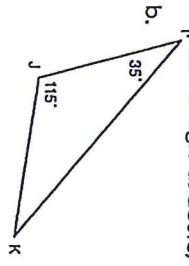
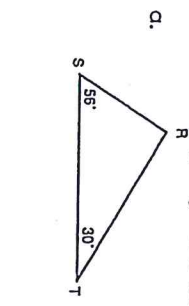
10. $\triangle AMNO \cong \triangle PRO$ by SAS

MO \cong PO

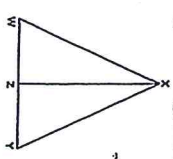
12. $\triangle STU \cong \triangle VWX$ by SSS

TU \cong WX

13. $\triangle ONE \cong \triangle MOW$ by ASA

OW \cong OE

14. Find the missing angle and classify the triangle as acute, obtuse, or right.



15. Given $WZ = YZ$ and $\angle XZY \cong \angle XZY$. By what method are the triangles congruent? Explain your reasoning.



State if the three numbers can be the measures of the sides of a triangle.

1) 7, 5, 4

2) 3, 6, 2

3) 5, 2, 4

4) 8, 2, 10

8, 2, 10

In-Class Section

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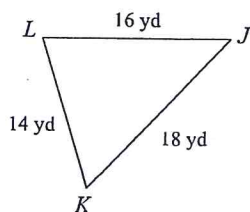
Two sides of a triangle have the following measures. Find the range of possible measures for the third side, X .

13) 9, 5

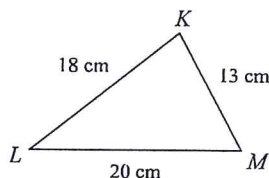
14) 5, 8

Order the angles in each triangle from smallest to largest.

1)

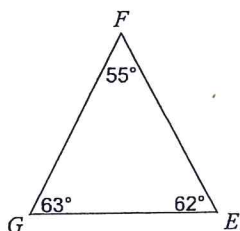


2)

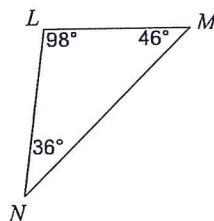


Order the sides of each triangle from shortest to longest.

9)



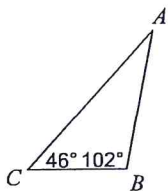
10)



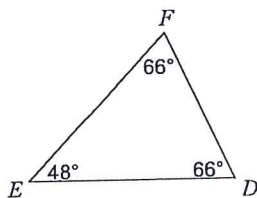
11) In $\triangle VWX$
 $m\angle V = 50^\circ$
 $m\angle W = 48^\circ$
 $m\angle X = 82^\circ$

Name the longest and shortest side in each triangle.

13)



14)



15) In $\triangle DEF$
 $m\angle D = 35^\circ$
 $m\angle F = 95^\circ$

State if the three numbers can be the measures of the sides of a triangle.

1) 7, 5, 4 $5+4 > 7$
yes

2) 3, 6, 2
 $3+2 < 6$
no

3) 5, 2, 4 $2+4 > 5$
yes

4) 8, 2, 10 $8+2 < 10$
no

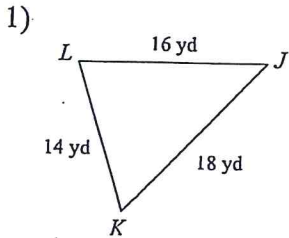
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Two sides of a triangle have the following measures. Find the range of possible measures for the third side. X.

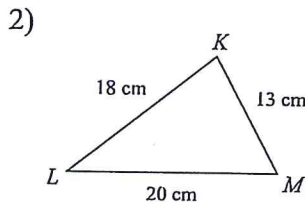
13) 9, 5 $4 < X < 14$
 $\frac{9-5}{2} < X < \frac{9+5}{2}$
 $2 < X < 7$

14) 5, 8 $3 < X < 13$

Order the angles in each triangle from smallest to largest.

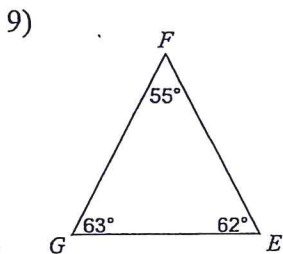


$\angle J$
 $\angle K$
 $\angle L$

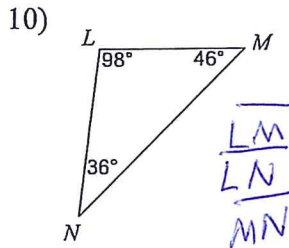


$\angle L$
 $\angle M$
 $\angle K$

Order the sides of each triangle from shortest to longest.

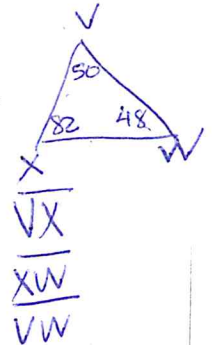


\overline{GE}
 \overline{FG}
 \overline{FE}

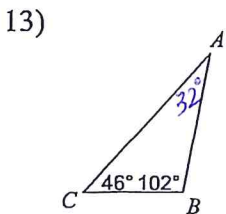


\overline{LM}
 \overline{LN}
 \overline{MN}

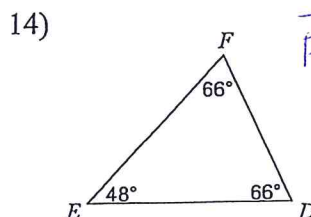
11) In $\triangle VWX$
 $m\angle V = 50^\circ$
 $m\angle W = 48^\circ$
 $m\angle X = 82^\circ$



Name the longest and shortest side in each triangle.



\overline{AC} longest
 \overline{BC} shortest



$\overline{FE} \cong \overline{DE}$ longer
 \overline{FD} shortest

15) In $\triangle DEF$
 $m\angle D = 35^\circ$
 $m\angle F = 95^\circ$
 $m\angle E = 50^\circ$

