Name _____

Lesson 21: Congruent Triangles – SAS, SSS, ASA

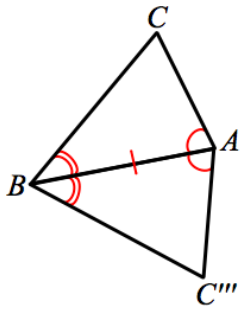
LEARNING TARGETS

I CAN **use** my knowledge of rigid motions to **prove** two triangles are congruent.

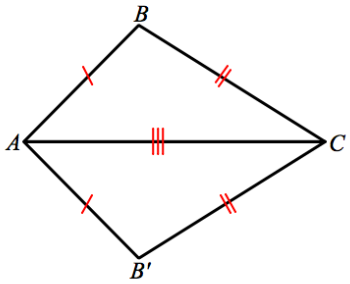
Warm Up

Looking at the three problems below, match them with what criteria can be used to prove the two triangles are congruent: SSS, SAS or ASA

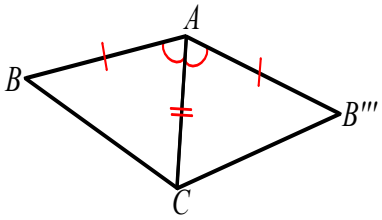
1.



2.



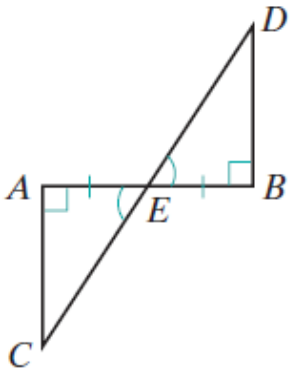
3.



4. *Given*: $\overline{AEB}$ and $\overline{CED}$ intersect at E, E is the midpoint of $\overline{AEB}$, $\overline{AC} \perp \overline{AE}$, and $\overline{BD} \perp \overline{BE}$.

Prove: $\triangle AEC \cong \triangle BDE$

Prove the triangles congruent by ASA.



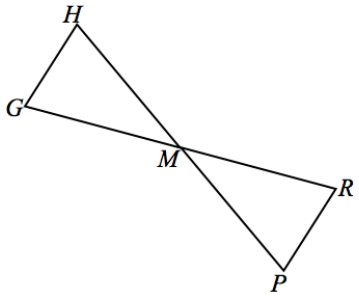
Mini Lesson

Example1:

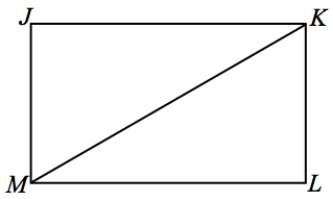
Based on the given information:

1. State the congruencies (SAS, SSS, or ASA) and the criteria used to determine them.
2. Prove the triangles congruent.

A. Given: M is the midpoint of $\overline{HP}$, $\text{m}\angle H = \text{m}\angle P$.



B. Given: Rectangle $JKLM$ with diagonal KM.



Work Time:

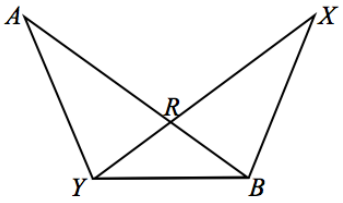
Exercise 1:

Based on the given information:

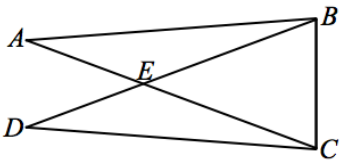
A. State the congruencies (SAS, SSS, or ASA) and the criteria used to determine them.

B. Prove the triangles congruent.

A. Given: $RY = RB, AR = XR.$



B. Given: $\text{m}\angle A = \text{m}\angle D, AE = DE$



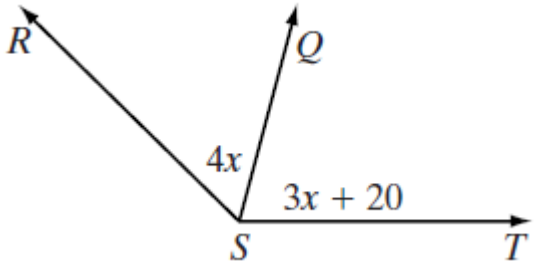
Name _____ Classwork/Homework

Lesson 21: Congruent Triangles – SAS, SSS, ASA

Homework.

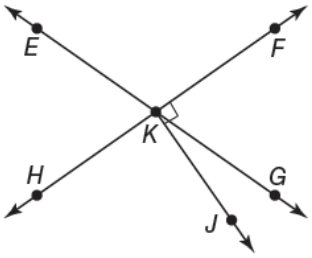
A.

$\overrightarrow{SQ}$ bisects $\angle RST$, $m\angle RSQ = 4x$, and $m\angle QST = 3x + 20$. Find the measures of $\angle RSQ$ and $\angle QST$.



B.

For Exercises 1–6, use the figure at the right. Name an angle or angle pair that satisfies each condition.



1. Name two acute vertical angles.

2. Name two obtuse vertical angles.

3. Name a linear pair.

4. Name two acute adjacent angles.

5. Name an angle complementary to $\angle EKH$.

6. Name an angle supplementary to $\angle FKG$.

C. $\triangle LMN$ is an isosceles triangle, with $LM = LN$, $LM = 3x - 2$, $LN = 2x + 1$, and $MN = 5x - 2$.

Find the measure of each side.