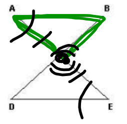
Geometry CC – Unit 5
Lesson 9: Triangle Congruence Proofs (Practice #2)
M1 L22-27

Name:_______________
Date:__________

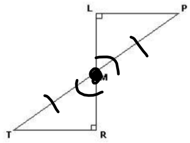
1. In the diagram: $\overline{ACE}$, $\overline{BCD}$ $\overline{AB}$, and $\overline{DE}$, $\angle A \cong \angle E$, and C is the midpoint of $\overline{AE}$.



Which theorem justifies $\Delta ABC \cong \Delta EDC$?

A. SSS ≅ SSS
B. SAS ≅ SAS
C. ASA ≅ ASA
D. SSA ≅ SSA

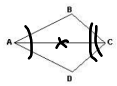
2. In the diagram: $\overline{RL} \perp \overline{LP}$, $\overline{LR} \perp \overline{RT}$, and M is the midpoint of $\overline{TP}$.



Which statement could be used to prove $\Delta TMR \cong \Delta PML$?

A. SAS ≅ SAS
B. AAS ≅ AAS
C. HL ≅ HL
D. SSS ≅ SSS

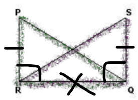
3. In the diagram of quadrilateral $ABCD$, $\overline{AC}$ is a diagonal that bisects $\angle BAD$ and $\angle BCD$.



Which statement can be used to prove that $\Delta ABC \cong \Delta ADC$?

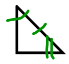
A. HL ≅ HL
B. SSS ≅ SSS
C. ASA ≅ ASA
D. SAS ≅ SAS

4. In the diagram, $\overline{PR} \cong \overline{SQ}$, $\overline{PR} \perp \overline{RQ}$, and $\overline{SQ} \perp \overline{RQ}$.

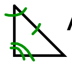


Which statement can be used to prove that $\Delta PQR \cong \Delta SRQ$?

A. AAS ≅ AAS
B. SAS ≅ SAS
C. HL ≅ HL
D. SSS ≅ SSS

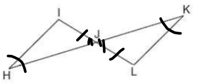


ASA



AAS

5. In the accompanying diagram, $\overline{HK}$ bisects $\overline{IL}$ and $\angle H \cong \angle K$.



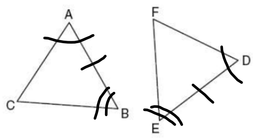
What is the most direct method of proof that could be used to prove $\Delta HIJ \cong \Delta KLJ$?

A. HL ≅ HL
B. SAS ≅ SAS
C. AAS ≅ AAS
D. ASA ≅ ASA

6. Which condition does *not* prove that two triangles are congruent?

A. SSS ≅ SSS
B. SSA ≅ SSA ← Donkey Theorem!
C. SAS ≅ SAS
D. ASA ≅ ASA

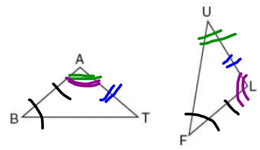
7. In the diagram of ΔABC and ΔDEF below, $\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$, and $\angle B \cong \angle E$.



Which method can be used to prove $\Delta ABC \cong \Delta DEF$?

A. SSS
B. SAS
C. ASA
D. HL

8. In the accompanying diagram of triangles BAT and FLU, $\angle B \cong \angle F$ and $\overline{BA} \cong \overline{FL}$.

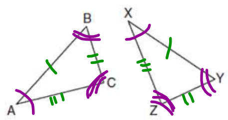


Which statement is needed to prove $\Delta BAT \cong \Delta FLU$?

A. $\angle A \cong \angle L$
B. $\overline{AT} \cong \overline{LU}$ SSA
C. $\angle A \cong \angle U$ Not corresponding angles
D. $\overline{BA} \parallel \overline{FL}$

Order matters!

9. In the diagram below, $\Delta ABC \cong \Delta XYZ$.

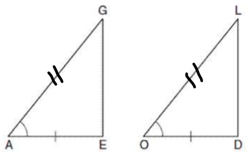


Corresponding parts of congruent triangles are congruent !!!!

Which two statements identify corresponding congruent parts for these triangles?

A. $\overline{AB} \cong \overline{XY}$ and $\angle C \cong \angle Y$
B. $\overline{AB} \cong \overline{YZ}$ and $\angle C \cong \angle X$
C. $\overline{BC} \cong \overline{XY}$ and $\angle A \cong \angle Y$
D. $\overline{BC} \cong \overline{YZ}$ and $\angle A \cong \angle X$

10. In the diagram below of $\triangle AGE$ and $\triangle OLD$, $\angle GAE \cong \angle LOD$, and $\overline{AE} \cong \overline{OD}$.

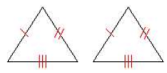


To prove that $\triangle AGE$ and $\triangle OLD$ are congruent by SAS what other information is needed?

A. $\overline{GE} \cong \overline{LD}$
B. $\overline{AG} \cong \overline{OL}$
C. $\angle AGE \cong \angle OLD$
D. $\angle AEG \cong \angle ODL$

11. Which statement best describes the term *congruent*?

A. same size
B. same shape
C. neither the same size or shape
D. both the same size and shape

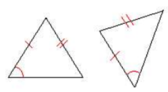


12.

The given information is enough to say that these triangles are congruent by

A. SSS
B. SAS
C. ASA
D. SSA

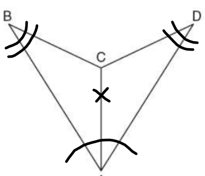
13. Are the two triangles congruent?



SSA, not a congruence theorem!!!!!

A. Yes
B. No

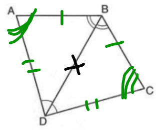
14. As shown in the diagram below, $\overline{AC}$ bisects $\angle BAD$ and $\angle B \cong \angle D$.



Which method could be used to prove $\triangle ABC \cong \triangle ADC$?

A. SSS
B. AAA
C. SAS
D. AAS

15. The diagram below shows a pair of congruent triangles, with $\angle ADB \cong \angle CDB$ and $\angle ABD \cong \angle CBD$.



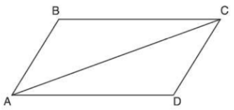
Now that the triangles are congruent by ASA all the corresponding parts are congruent!

Which statement must be true?

A. $\angle ADB \cong \angle CBD$
B. $\angle ABC \cong \angle ADC$
C. $\overline{AB} \cong \overline{CD}$
D. $\overline{AD} \cong \overline{CD}$

$\triangle ABD \cong \triangle CBD$

16. Given that *ABCD* is a parallelogram, a student wrote the proof below to show that a pair of its opposite angles are congruent.

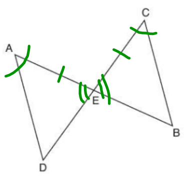


Statement	Reason
1. ABCD is a parallelogram.	1. Given
2. $\overline{BC} \cong \overline{AD}$, $\overline{AB} \cong \overline{DC}$	2. Opposite sides of a parallelogram are congruent.
3. $\overline{AC} \cong \overline{CA}$	3. Reflexive Postulate of Congruency
4. $\triangle ABC \cong \triangle CDA$	4. Side-Side-Side
5. $\angle B \cong \angle D$	5. CPCTC

What is the reason justifying that $\angle B \cong \angle D$?

A. Opposite angles in a quadrilateral are congruent.
B. Parallel lines have congruent corresponding angles.
C. Corresponding parts of congruent triangles are congruent.
D. Alternate interior angles in congruent triangles are congruent.

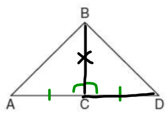
17. In the diagram below of $\triangle DAE$ and $\triangle BCE$, $\overline{AB}$ and $\overline{CD}$ intersect at *E*, such that $\overline{AE} \cong \overline{CE}$ and $\angle BCE \cong \angle DAE$.



Triangle *DAE* can be proved congruent to triangle *BCE* by

A. *ASA*
B. *SAS*
C. *SSS*
D. *HL*

18. Given $\triangle ABD$, $\overline{BC}$ is the perpendicular bisector of $\overline{AD}$.



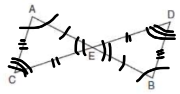
Right Angles

Segment Bisector

Which statement can *not* always be proven?

A. $\overline{AC} \cong \overline{DC}$ ✓ segment bisector
B. $\overline{BC} \cong \overline{CD}$
C. $\angle ACB \cong \angle DCB$ ✓ Right Angles
D. $\triangle ABC \cong \triangle DBC$ Reflexive Property to give us SAS

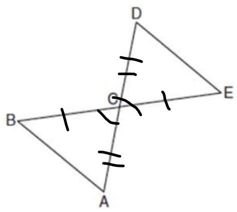
19. In the diagram below, $\triangle AEC \cong \triangle BED$:



Which statement is *not* always true?

A. $\overline{AC} \cong \overline{BD}$
B. $\overline{CE} \cong \overline{DE}$
C. $\angle EAC \cong \angle EBD$
D. $\angle ACE \cong \angle DBE$

20. Given:
$\overline{BE}$ and $\overline{AD}$ intersect at point C
$\overline{BC} \cong \overline{EC}$
$\overline{AC} \cong \overline{DC}$
$\overline{AB}$ and $\overline{DE}$ are drawn



Which of the following is the correct way to prove $\triangle ABC \cong \triangle DEC$?

A. Hypotenuse, Leg
B. Angle, Side, Angle
C. Side, Angle, Side
D. Side, Side, Side