Name: _____   **Date:**_____   **Score:**_____
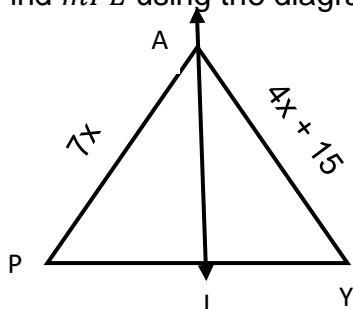
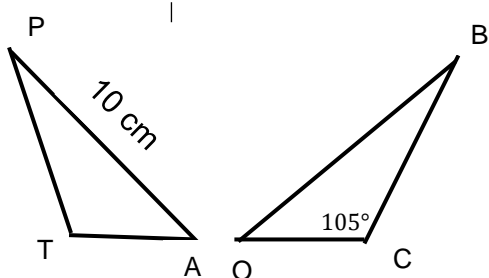## **Solving Corresponding Parts of Congruent Triangles**

A. Solve the following:

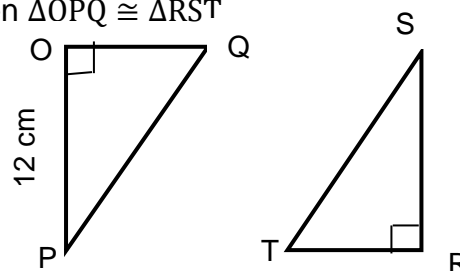1. Find $m\overline{PL}$ using the diagram if $\Delta PAL \cong \Delta YAL$.

2. Given: $\Delta TAP \cong \Delta COB$

     Find: a. $m\overline{OB}$ b. m∠T

3. Given $\Delta OPQ \cong \Delta RST$

     If m∠S = 25°, find:

     a. m∠P   b. $m\overline{SR}$

4. If: $\Delta ABC \cong \Delta DEF$
   m∠A = 40°, m∠B = 55°,
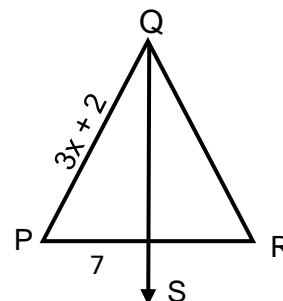 $m\overline{DE} = 11\ cm$, $m\overline{DF} = 7\ cm$
   Draw the two congruent triangles
   and find
   a. $m\overline{AC}$ b. m∠F

5. Find the value of x if
   $\Delta PQS \cong \Delta RQS$.

B. Find the value of x.

1.

E

$5x$

T

A

$3x + 10$

S

2.

A

$x + 3$

12

F

E

R

3.

E

$5x$

R

M

$3x + 4$

P

4.

T

N

E

$x + 5$

$2x - 3$

R

5.

A

C

$2x + 6$

20

B

D

E

6.

$x + 8$

C

G

T

15 A

D

7.

$7x + 4$

28

$9x + 1$

$x + 2$

Specific Week: Week 5
Target Competency: solves corresponding parts of congruent triangles and proves triangles are congruent.
Note to the Teacher: This is a summative assessment.

Proving Triangles are Congruent

A. Determine what additional pair of corresponding parts must be congruent to prove that the two triangles are congruent using the indicated congruence postulate and theorems.

Example:
Answer: $\overline{AC} \cong \overline{DF}$.

AAS Congruence Theorem

1. _____
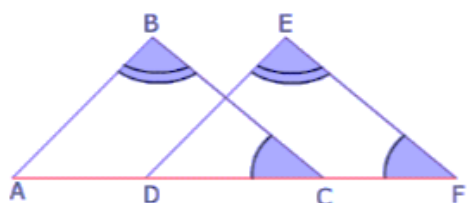
SAA Congruence Theorem

2. _____

ASA Congruence Theorem

3. _____
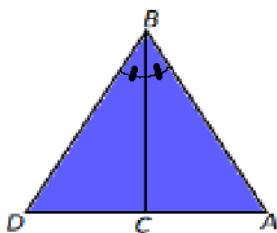
SAS Congruence Postulate

4. _____
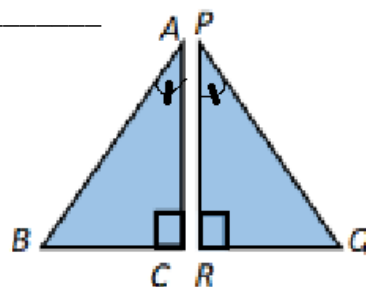
HA Congruence Theorem

5. _____

LA Congruence Theorem

6 _____

LL Congruence Theorem

7. _____

HL Congruence Theorem

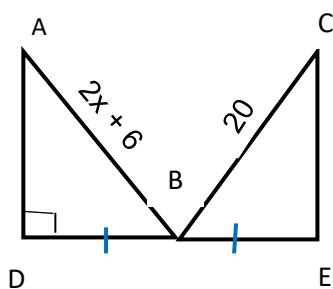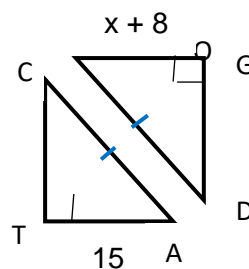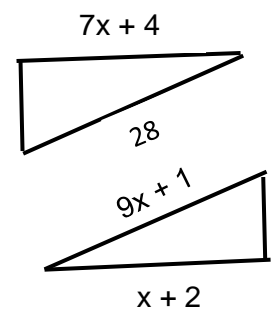**Specific Week:** Week 5
Target Competency: solves corresponding parts of congruent triangles and proves triangles are congruent.
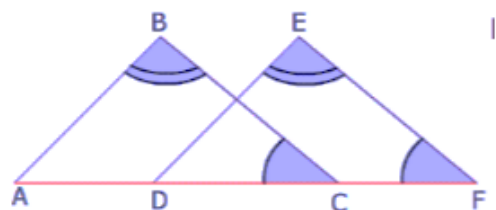**Note to the Teacher:** This is a summative assessment.

(This is a Government Property. Not For Sale.)

Directions: Choose and write the letter of your answer on the space provided before the number.
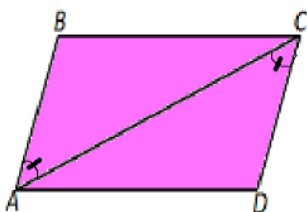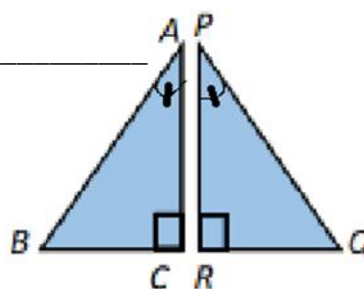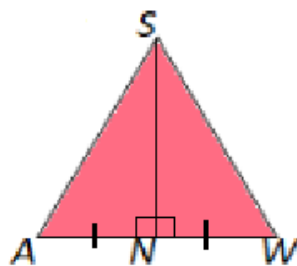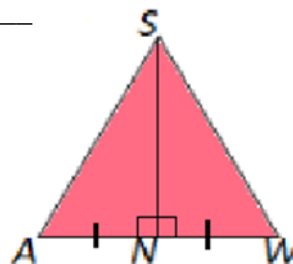
_____1. What congruence postulate/theorem cannot be used to prove that $\triangle LIV \cong \triangle JIN$ given that $\overline{LV}$ is parallel to $\overline{JN}$ and $\overline{LJ}$ and $\overline{VN}$ bisect each other?

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

_____2. Using the same figure and given in number 1, what additional pair of congruent parts is needed to prove that $\triangle LIV \cong \triangle JIN$ by using SSS congruence theorem? ($\overline{LI} \cong \overline{JI}$ and $\overline{VI} \cong \overline{NI}$ because segments $\overline{LJ}$ and $\overline{VN}$ bisect each other)

　　A. $\overline{LI} \cong \overline{JI}$　　　B. $\overline{VI} \cong \overline{NI}$　　　C. $\overline{LV} \cong \overline{JN}$　　　D. $\overline{IL} \cong \overline{IJ}$

_____3. Using the same figure and given in number 1, what additional pair of congruent parts is needed to prove that $\triangle LIV \cong \triangle JIN$ by using SAS congruence postulate? ($\overline{LI} \cong \overline{JI}$ and $\overline{VI} \cong \overline{NI}$ because segments $\overline{LJ}$ and $\overline{VN}$ bisect each other)

　　A. $\angle VLI \cong \angle JNI$　　　B. $\angle LIV \cong \angle NIJ$　　　C. $\angle LVI \cong \angle NJI$　　　D. $\angle IVL \cong \angle IJN$

_____4. In the given figure, what congruence postulate/theorem will prove that $\triangle CAS \cong \triangle JIN$?
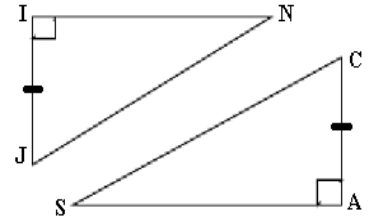
　　A. SAA　　　　　B. SAS　　　　　C. SSS　　　　　D. ASA
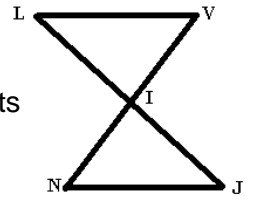
_____5. Given the figure where $\triangle JIN$ and $\triangle CAS$ are right triangles and $\overline{JN} \cong \overline{CS}$. What right triangle congruence theorem proves that $\triangle JIN$ and $\triangle CAS$ are congruent?

　　A. HA　　　　　B. LA　　　　　C. LL　　　　　D. HL

_____6. Given $\triangle CAS \cong \triangle JIN$, what is the measure of $\angle S$ if $\angle N =(x +2)^0$ and $\angle C = (2x +8)^0$ and $\angle I = 50^0$

　　A. 35^0　　　　　B. 42^0　　　　　C. 49^0　　　　　D. 56^0

_____7. Using the same given in number 6, what is the value of x?

　　A. 40　　　　B. 42　　　　C. 44　　　　D. 46

_____8. Given isosceles triangle $\triangle ABC$ with $AB \cong AC$ and AD is perpendicular to BC at D. What right triangle congruence theorems will prove that $\triangle ADB \cong \triangle ADC$?

　　A. HA & LA　　　B. LA & LL　　　C. LL& HL　　　D. HL & HA

_____9. Which of the following cannot be used to prove the congruence of triangles?

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

_____ 10. Given isosceles $\triangle BUR$ and $\overline{UB} \cong \overline{UR}$. If Y is a point on the altitude to $\overline{BR}$, what can we conclude about $\overline{BY}$ and $\overline{RY}$?

　　A. $\overline{BY} > \overline{RY}$　　　B. $\overline{BY} = \overline{RY}$　　　C. $\overline{BY} < \overline{RY}$　　　D. insufficient Information

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