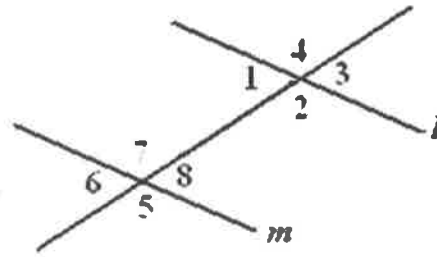


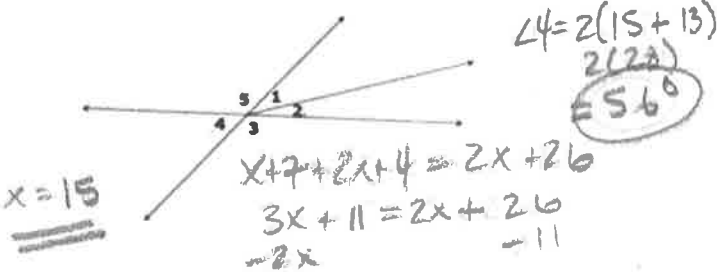
Reminders:  $\perp$  means perpendicular,  $m\angle = 90^\circ$ . Find the triangle congruency with corresponding angles example.

1) Name one pair of angles for each description.

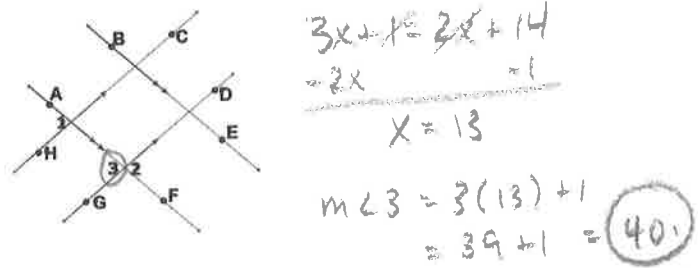
- Corresponding  $\angle 1 \text{ \& } \angle 6$
  - Alternate Interior  $\angle 1 \text{ \& } \angle 8$
  - Alternate Exterior  $\angle 3 \text{ \& } \angle 6$
  - Vertical  $\angle 2 \text{ \& } \angle 4$
  - Same side interior  $\angle 1 \text{ \& } \angle 7$
- } all  $\cong$



2) If  $m\angle 1 = x + 7$ ,  $m\angle 2 = 2(x + 2)$ , and  $m\angle 4 = 2(x + 13)$  in the diagram below, find  $m\angle 4$ .



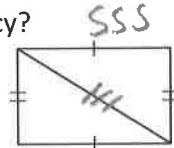
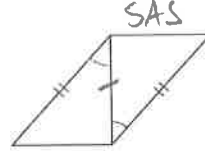
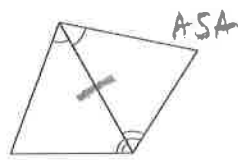
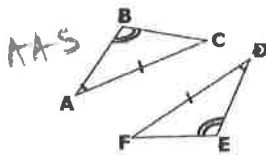
3) Find  $m\angle 3$  if  $m\angle 1 = 3x + 1$  and  $m\angle 2 = 2(x + 7)$ .



4) What are the five theorems / rules used to prove that two triangles are congruent?

SSS, SAS, ASA, AAS, HL

5) Consider the triangles shown. Which rule, if any, can be used to prove triangle congruency?



6)  $\triangle PQR$  and  $\triangle STU$  are congruent triangles. Using this information, list the corresponding sides and corresponding angles.

- $\angle P \cong \angle S$
- $\angle Q \cong \angle T$
- $\angle R \cong \angle U$
- $\overline{PQ} \cong \overline{ST}$
- $\overline{QR} \cong \overline{TU}$
- $\overline{PR} \cong \overline{SU}$

7) For  $\triangle EFG$  and  $\triangle MNP$ , it is known that  $\overline{EG} \cong \overline{MP}$ ,  $\angle G \cong \angle P$ , and  $\overline{FG} \cong \overline{NP}$ . Determine if the triangles are congruent, and if so, by which type of congruency.



a. SSS

c. ASA

b. SAS

D. It cannot be determined if the triangles are congruent.

8)  $\triangle DEF$  and  $\triangle TUV$  are congruent triangles. Which statement is known to be true?

a.  $\overline{DE} \cong \overline{TU}$  ✓

c.  $\overline{DF} \cong \overline{UV}$  ✗

b.  $\overline{DF} \cong \overline{TU}$  ✗

d.  $\overline{DE} \cong \overline{TV}$  ✗

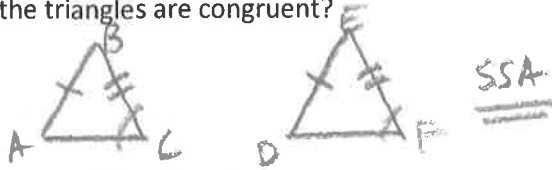
9) For  $\triangle ABC$  and  $\triangle DEF$ , the following is given:  $\angle C \cong \angle F$ ,  $\overline{AB} \cong \overline{DE}$ , and  $\overline{BC} \cong \overline{EF}$ . By which triangle congruence statement can it be concluded that the triangles are congruent?

a. SSS

c. ASA

b. SAS

d. It cannot be determined if the triangles are congruent.



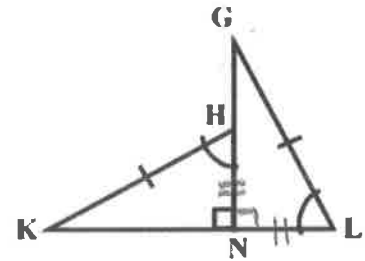
10) Determine what additional information is needed to prove  $\triangle NKH \cong \triangle NGL$  by SAS.

~~a)  $\overline{KN} \cong \overline{GN}$~~

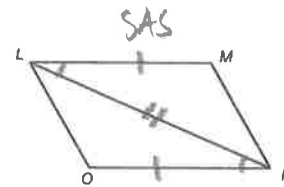
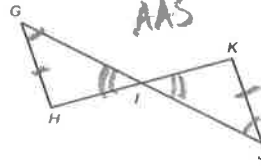
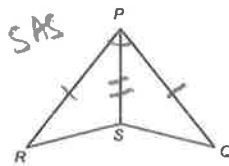
~~b)  $\angle KNH \cong \angle GNL$~~

~~c)  $\angle HKN \cong \angle LGN$~~

d)  $\overline{HN} \cong \overline{LN}$



11) Determine whether each pair of triangles is congruent. If so, write a congruence statement, and explain why the triangles are congruent.



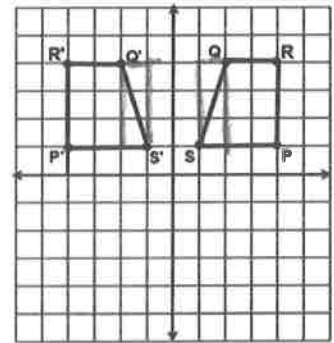
12) True or False: Rigid motion transformations such as translations, reflections & rotations result in a pre-image that is not congruent to its post-image.

13) True or False: All similar triangles are congruent. True or False: All congruent triangles are similar.

14) In the figure at right, the pre-image on the left has been reflected about the y-axis. Explain how you know that the post-image is congruent or not. This should include distance and slope.

$\angle R \cong \angle R' = 90^\circ$   
 $\angle P \cong \angle P' = 90^\circ$   
 $\angle S \cong \angle S' = \text{slope of } 3/1$   
 $\angle Q \cong \angle Q' = \text{slope of } 3/1$

$RQ \cong R'Q' = 2 \text{ units}$   
 $RP \cong R'P' = 3 \text{ units}$   
 $PS \cong P'S' = 3 \text{ units}$   
 $SQ \cong S'Q' = \sqrt{10} \text{ units}$



15) Find the distances between these two points.

$(10, 7)$  and  $(-7, -4)$

$x_2$        $x_1$

$$d = \sqrt{(17)^2 + (11)^2}$$

$$= 20.25 \text{ units}$$

16) Make sure you understand a vertical compression vs a horizontal compression.

Vertical



Horizontal

