

Lesson 2.03 – “On Your Own” Worksheet

Name: Key

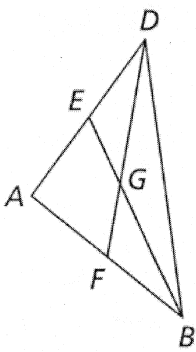
5. Assume  $\triangle CAT \cong \triangle DOG$ . List all the corresponding parts.

<u>Angles</u>	<u>Sides</u>
$\angle C \cong \angle D$	$\overline{CA} \cong \overline{DO}$
$\angle A \cong \angle O$	$\overline{AT} \cong \overline{OG}$
$\angle T \cong \angle G$	$\overline{CT} \cong \overline{DG}$

6. **Standardized Test Prep** You are given that  $\triangle DFG \cong \triangle CHK$ . Which of the following statements is true by “corresponding parts of congruent figures are congruent”?

- A.  $m\angle FGD = m\angle CKH$                       B.  $\overline{CH} \cong \overline{DG}$   
 C.  $DF = HK$                                       D.  $\angle FGD \cong \angle KCH$

7. Use the figure below. Some pairs of triangles are *certainly not* congruent. List any pairs of triangles that appear to be congruent.



$\triangle AFD \cong \triangle AEB$   
 $\triangle FBD \cong \triangle EDB$   
 $\triangle EGD \cong \triangle FGB$

8. You can compare figures in many different ways. Congruence is a *shape* comparison. Area is a *quantitative* comparison. Use what you know about area to answer the following questions.

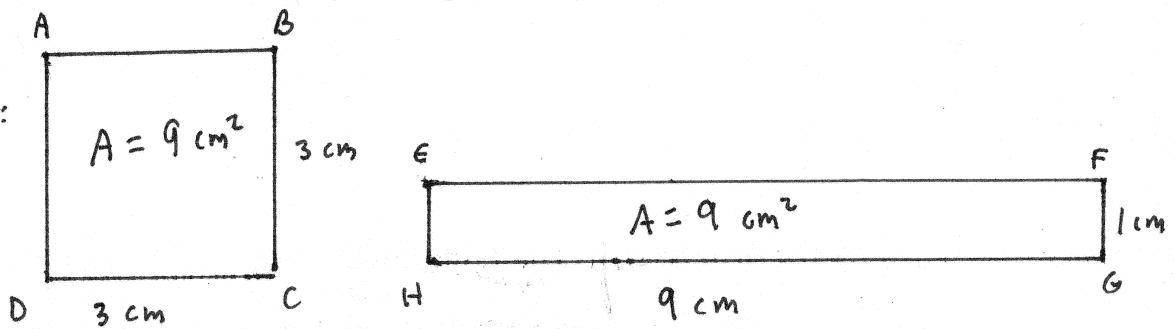
a. If two polygons are congruent, must they have the same area? Explain.

Yes; If two polygons are congruent, they must be the same size and shape. The area inside each polygon must also be the same.

b. If two polygons have the same area, must they be congruent? Explain.

No;

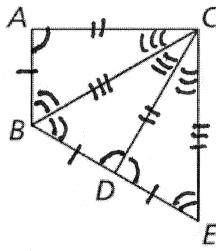
counterexample:



ABCD is not congruent to EFGH

Similarity is another shape comparison. Perimeter is another quantitative comparison.

9. The figure below contains three congruent triangles.



a. Write a correct congruence statement for the three congruent triangles.

$$\triangle ABC \cong \triangle DBC \cong \triangle DEC$$

b. On your own sketch, mark congruent corresponding parts.

c. In quadrilateral  $ABDC$ , which triangle is congruent to  $\triangle ABC$ ?

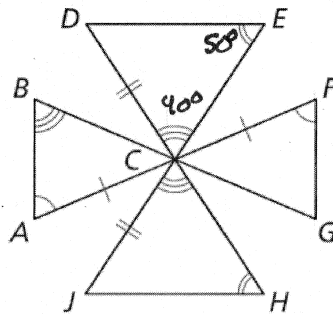
$$\triangle DBC$$

d. In  $\triangle BCE$ , which triangle is congruent to  $\triangle ECD$ ?

$$\triangle BCD$$

10. The figure at the right is not drawn to scale.

The markings indicate which pairs of segments and which pairs of angles are congruent. Segments that appear to be straight are meant to be.



a. Assume  $m\angle F = 80^\circ$ ,  $m\angle H = 50^\circ$ , and  $m\angle B = 40^\circ$ . What are the measures of  $\angle A$ ,  $\angle E$ , and  $\angle D$ ?

$$m\angle A = \underline{80^\circ} \quad m\angle E = \underline{50^\circ} \quad m\angle D = \underline{90^\circ}$$

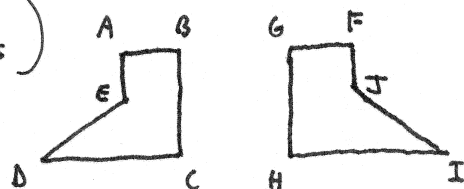
11. Think about two congruent irregular pentagons. How many pairs of corresponding parts do they have? Draw and label your pentagons. Write a congruence statement. List all corresponding congruent parts.

Figures

pairs of corresponding points? 10 pairs (5 angle pairs, 5 segment pairs)

congruence statements:  $\underline{ABCDE \cong FGHIJ}$

list of corresponding parts:



Angles:  $\angle A \cong \angle F$ ,  $\angle B \cong \angle G$ ,  $\angle C \cong \angle H$ ,  $\angle D \cong \angle I$ ,  $\angle E \cong \angle J$

Segments:  $\overline{AB} \cong \overline{FG}$ ,  $\overline{BC} \cong \overline{GH}$ ,  $\overline{CD} \cong \overline{HI}$ ,  $\overline{DE} \cong \overline{IJ}$ ,  $\overline{AE} \cong \overline{FJ}$