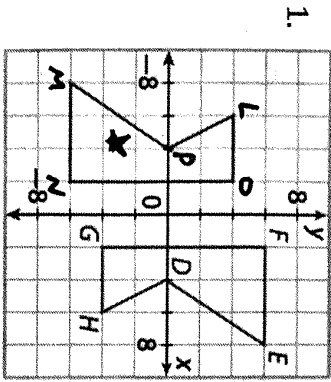


Figure 1
is
the
preimage

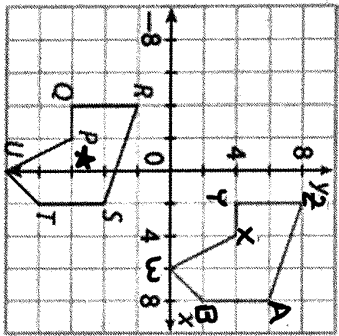
- Find a sequence of transformations that maps one figure to the other.
- Write a congruence statement (i.e. $\triangle ABC \cong \triangle DEF$). Order of the letters matters!
- Identify congruent parts.



Rotate 180° about (0,0)

$\triangle PLO \cong \triangle DGH$
Congruence statement

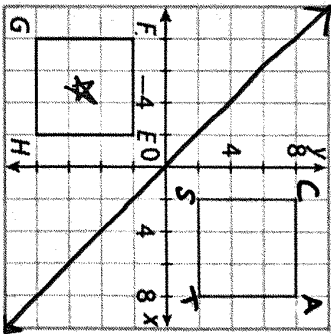
$$\begin{aligned} \overline{LO} &\cong \overline{HG} \\ \overline{ON} &\cong \overline{GF} \\ \overline{MP} &\cong \overline{ED} \\ \angle O &\cong \angle G \end{aligned}$$



Translate by vector $\langle 6, 10 \rangle$

$\triangle ABC \cong \triangle XYZ$

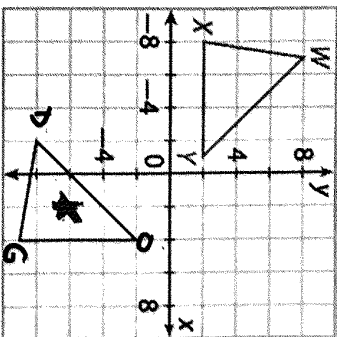
$$\begin{aligned} \overline{PQ} &\cong \overline{XY} \\ \angle S &\cong \angle A \\ \overline{RS} &\cong \overline{ZA} \end{aligned}$$



Reflect across $y = -x$

$\triangle ABC \cong \triangle EFG$

$$\begin{aligned} \overline{EF} &\cong \overline{BC} \\ \overline{GH} &\cong \overline{AT} \\ \angle G &\cong \angle A \end{aligned}$$

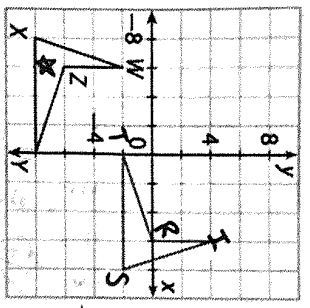


Rotate 90° clockwise
Translate $\langle 1, 6 \rangle$

$$\begin{aligned} \triangle WXY &\cong \triangle DGO \\ \overline{DG} &\cong \overline{WX} \\ \angle Y &\cong \angle O \\ \angle D &\cong \angle W \end{aligned}$$

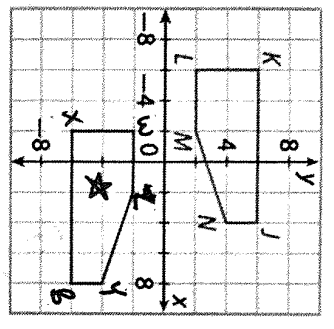
Key

- a. Find a sequence of transformations that maps one figure to the other.
- b. Write a congruency statement (i.e. $\triangle ABC \cong \triangle DEF$). Order of the letters matters!
- c. Identify congruent parts.



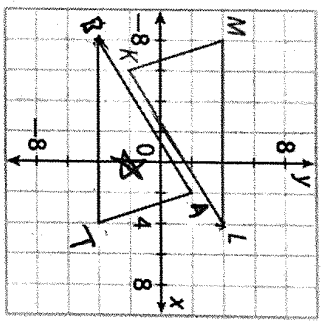
Reflect across y axis
 Translate $\langle 0, 6 \rangle$

$WXYZ \cong TSTR$
 $\overline{WX} \cong \overline{TS}$
 $\angle Y \cong \angle T$
 $\overline{XY} \cong \overline{ST}$



Reflect across x axis
 Translate $\langle -4, 0 \rangle$

$WXYZ \cong MNJK$
 $\overline{ZY} \cong \overline{MN}$
 $\angle X \cong \angle K$
 $\angle B \cong \angle S$



Rotate 180°
 Translate $\langle -4, 0 \rangle$

$\triangle BAT \cong \triangle LKM$
 $\overline{BA} \cong \overline{LK}$
 $\angle A \cong \angle K$
 $\angle T \cong \angle M$

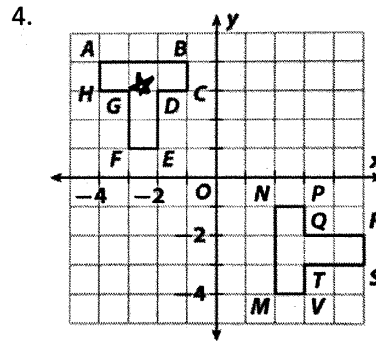
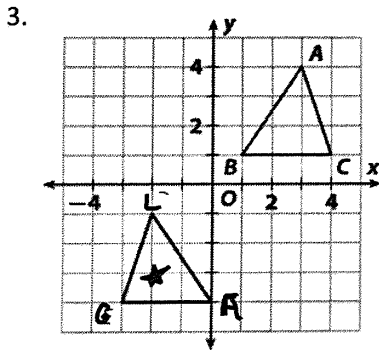
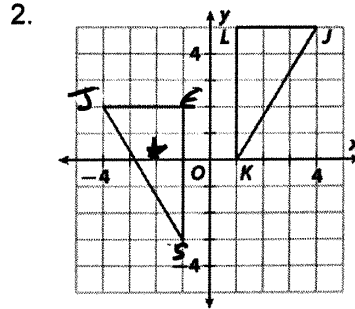
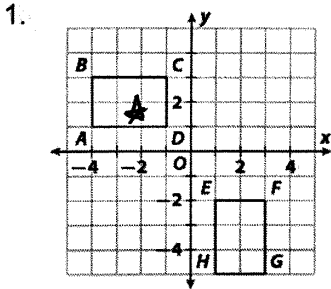
8. Which sequence of transformations does not map a figure onto a congruent figure? Explain.

- A. Rotation of 180° about the origin, reflection across the x-axis, horizontal translation $(x, y) \rightarrow (x + 4, y)$
- B. Reflection across the y-axis, combined translation $(x, y) \rightarrow (x - 5, y + 2)$
- C. Rotation of 180° about the origin, reflection across the y-axis, dilation $(x, y) \rightarrow (2x, 2y)$**
- D. Counterclockwise rotation of 90° about the origin, reflection across the y-axis, combined translation $(x, y) \rightarrow (x - 11, y - 12)$

→ SIZE

Sequences of Transformations Homework

For each pair of congruent figures, specify a sequence of rigid motions that maps one figure onto the other. The starred figure is the pre-image! Name all congruent corresponding parts.



5. Use two transformations to get from the pre-image to the image. Describe your transformations using coordinate notation $(x,y) \rightarrow (\underline{\hspace{1cm}} , \underline{\hspace{1cm}})$

