9-1 Intro to Transformations

Objectives:

- I can use the proper vocabulary and notation when it comes to translations

- I can identify rigid motion

Vocab List

Image: after transformation

Pre-image: before transformation

line segment: Line b/t 2 points $\overline{AB}$

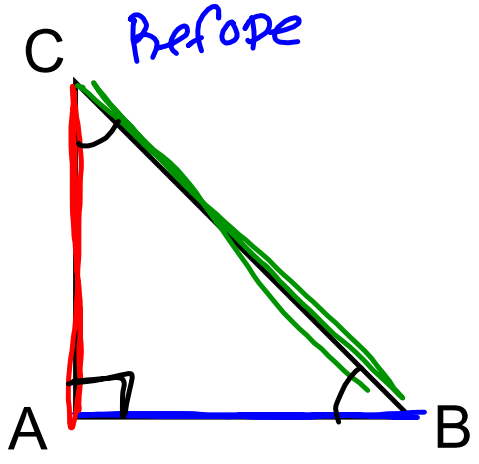
angle: where 2 points meet $\angle A$

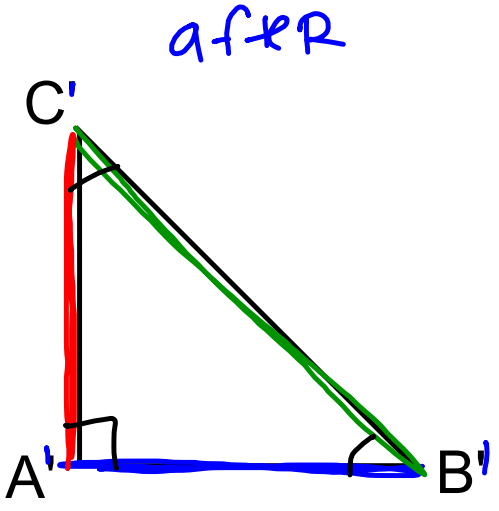
corresponding sides: same side different shape $\overline{AB} \sim \overline{CD}$

corresponding angles: same $\angle$ different shape $\angle A \sim \angle B$

Given that $\triangle ABC$ is the pre-image of $\triangle A'B'C'$

state the following:





Corresponding sides

$\overline{AB} \sim \overline{A'B'}$

$\overline{AC} \sim \overline{A'C'}$

$\overline{CB} \sim \overline{C'B'}$

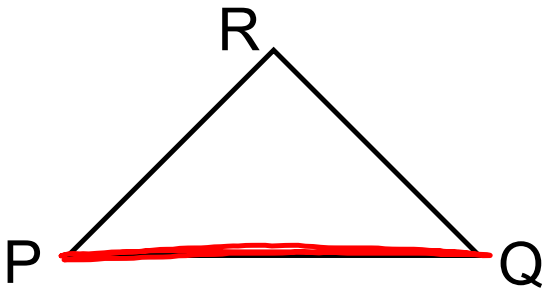
Corresponding Angles

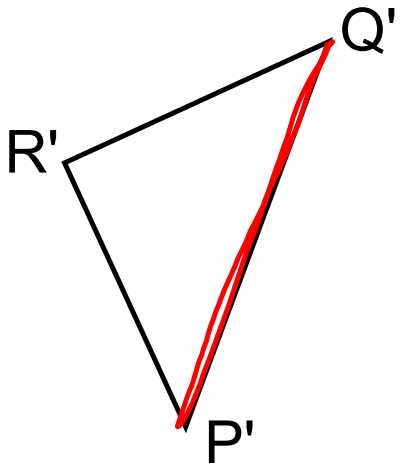
$\angle A \sim \angle A'$

$\angle B \sim \angle B'$

$\angle C \sim \angle C'$

Given that $\triangle PQR$ is the pre-image of $\triangle P'Q'R'$ state the following:





Corresponding Sides

$\overline{PQ} \sim \overline{P'Q'}$

$\overline{PR} \sim \overline{P'R'}$

$\overline{RQ} \sim \overline{Q'R'}$

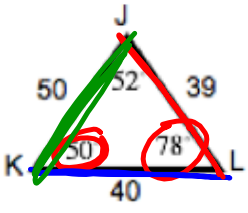
Corresponding Angles

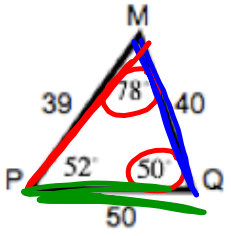
$\angle P \sim \angle P'$

$\angle Q \sim \angle Q'$

$\angle R \sim \angle R'$

State the corresponding sides and angles of pre-image $\triangle JKL$ and image $\triangle PQM$





Corresponding sides

$\overline{KL} \sim \overline{QM}$

$\overline{LJ} \sim \overline{MP}$

$\overline{JK} \sim \overline{PQ}$

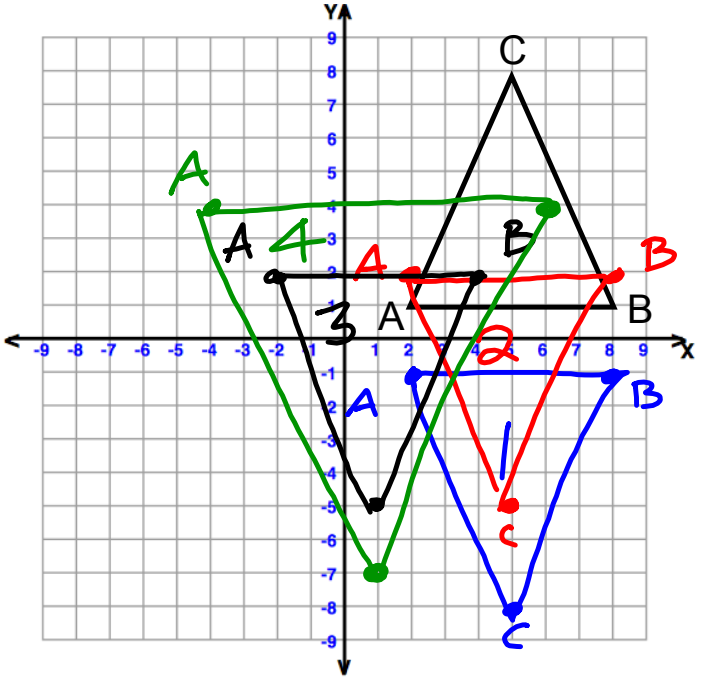
Corresponding Angles

$\angle K \sim \angle Q$

$\angle L \sim \angle M$

$\angle J \sim \angle P$

Given $\triangle ABC$ perform the following



1. Reflect over x-axis
2. Move up 3
3. Move left 4
4. stretch out 2

Which movements kept the triangle the same shape and size? 1, 2, 3 - Rigid Motion

Which movements changed the size and shape of the triangle? 4

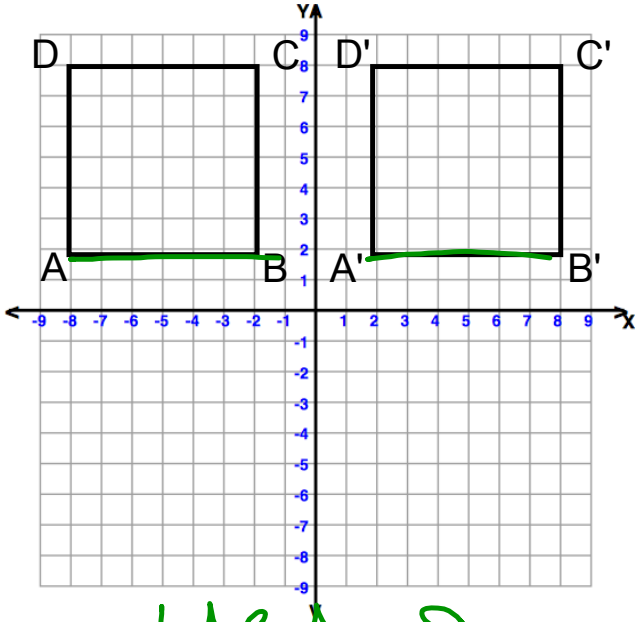
Rigid Motion:

Same shape
Same size

Examples: Reflections, rotations, translations

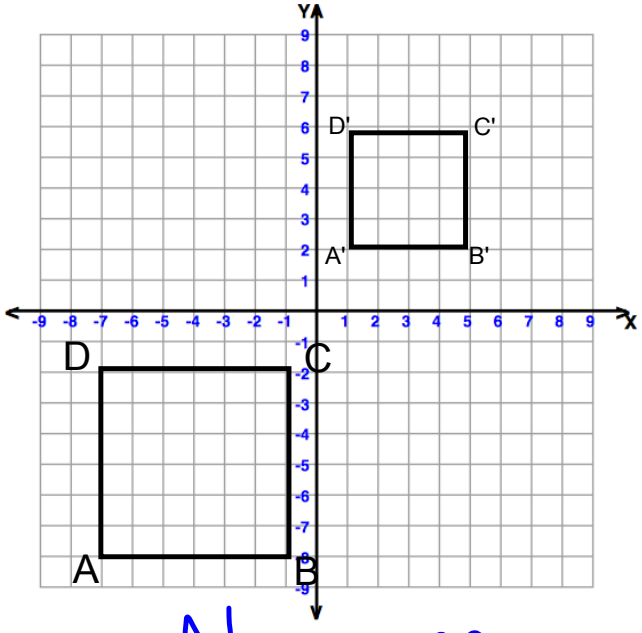
up, down, left + right

Identify if the change from pre-image ABCD to image A'B'C'D' is ridged or not



Why or Why not: Yes, Same Shape & Size

Identify if the change from pre-image ABCD to image A'B'C'D' is ridged or not



Why or Why not: No, different size

Translation means:

Shifting Left, Right, up or down

This is an example of rigid motion

Notation

x moves right 5

$$T_{\langle 5,-2\rangle}(x,y)$$

Translate

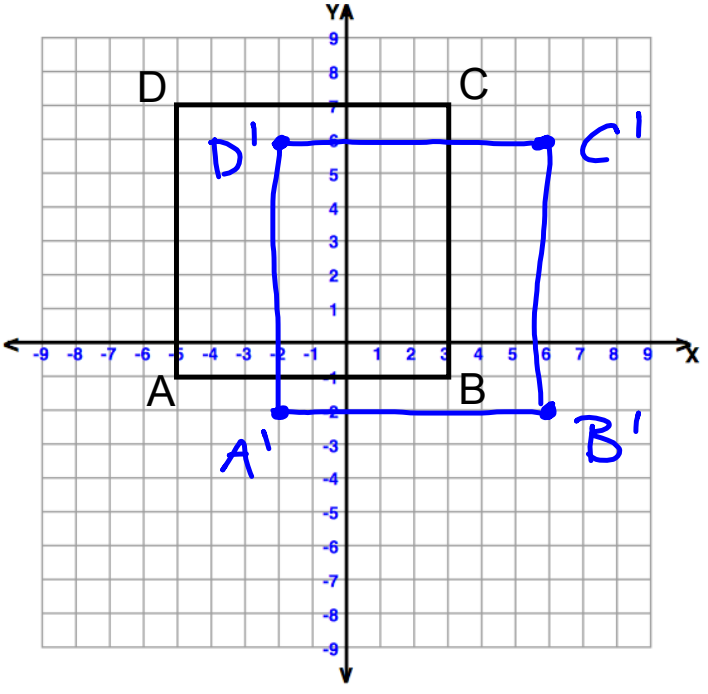
y moves down 2

Given ABCD perform the following transformation

$$T_{<3,-1>}(x,y)$$

Right 3

down 1

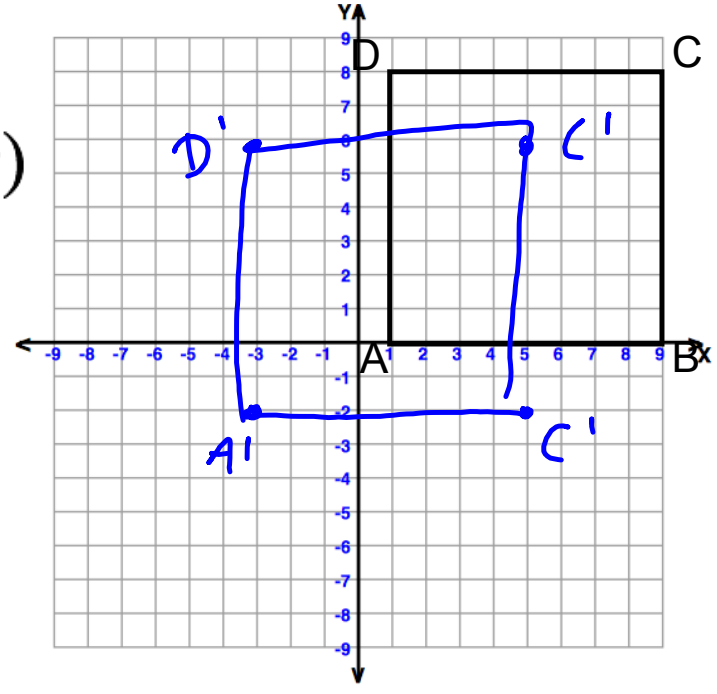


Given ABCD perform the following transformation

$$T_{<-4,-2>}(x,y)$$

Left 4

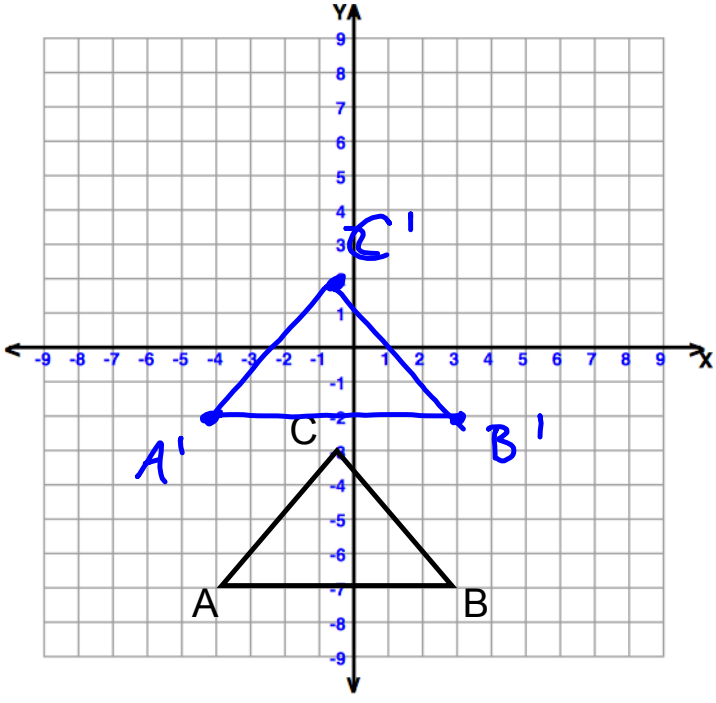
down 2



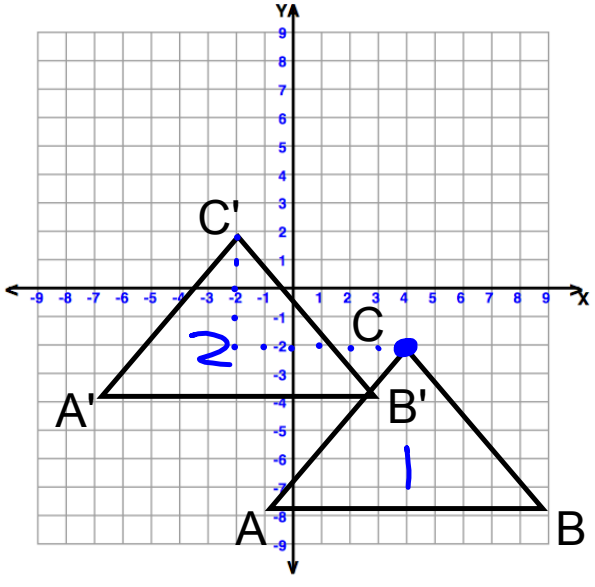
Given $\triangle ABC$ perform the following translation

$T_{<0,5>}(x,y)$

UP 5



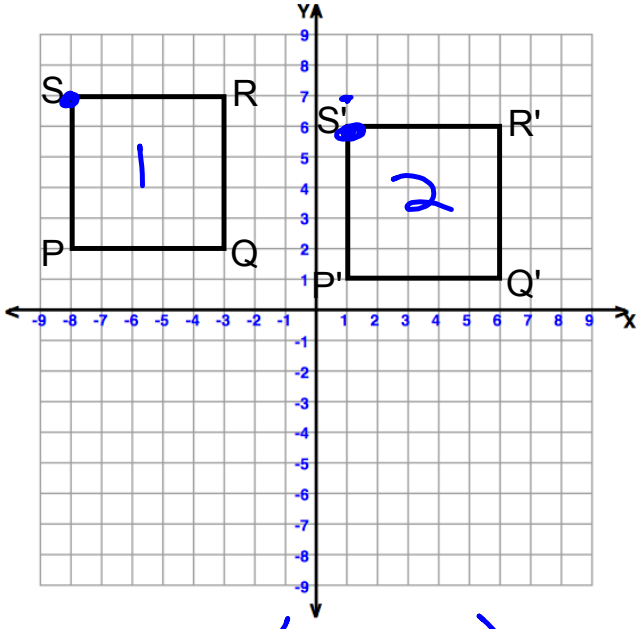
Given the pre-image $\triangle ABC$ and the image $\triangle A'B'C'$ write the translation that was performed



Left 6
Up 4

$T\langle -6, 4\rangle (x, y)$

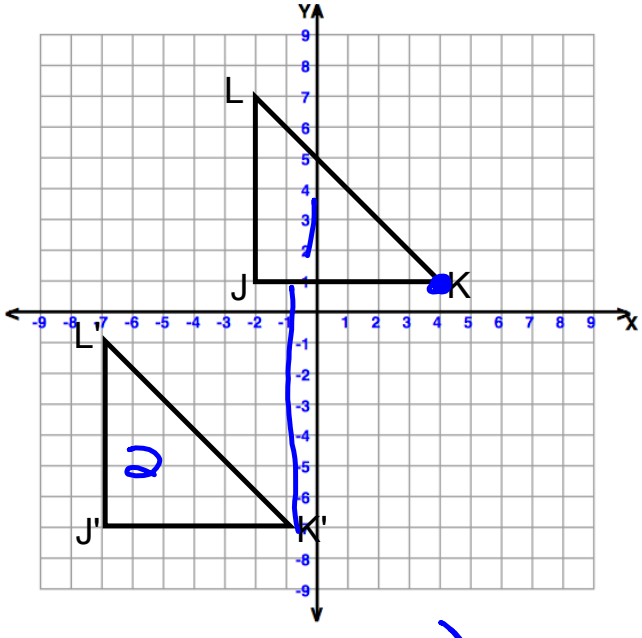
Given the pre-image PQRS and the image P'Q'R'S' write the translation that was performed



Right 9
down 1

$T\langle 9, -1\rangle(x, y)$

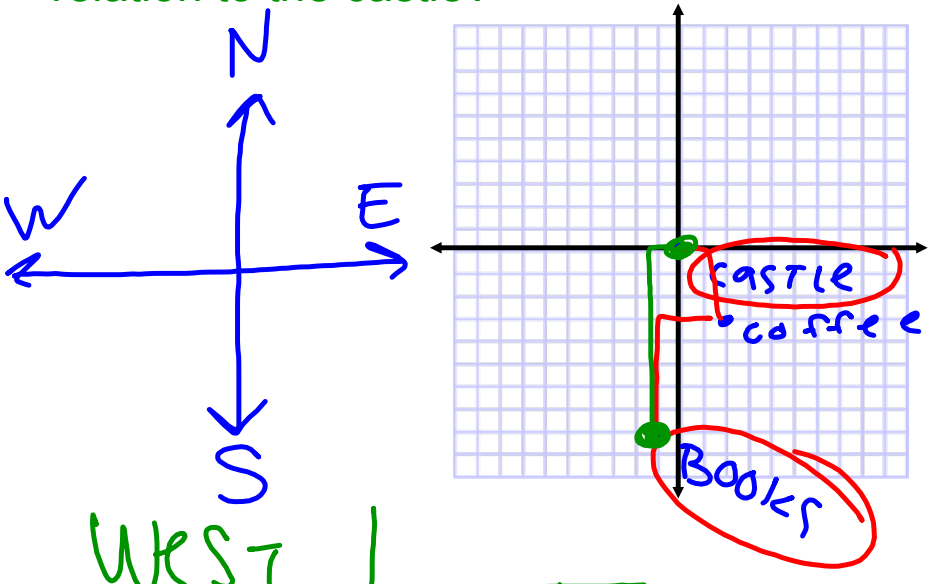
Given the pre-image $\triangle JKL$ and the image $\triangle J'K'L'$ write the translation that was performed



Left 5
down 8

$T\langle -5, -8\rangle (x, y)$

Harry, Ron, and Hermione are visiting Hogsmeade for the day. From the castle they walk 2 blocks east and 3 blocks south to the coffee shop. Then they walk 3 blocks west and 5 blocks south to the book shop. Where is the book shop in relation to the castle?



West 1
South 8

T <-1,-8> (x, y)