

Name Abulson

① 1/12

T_a = translation

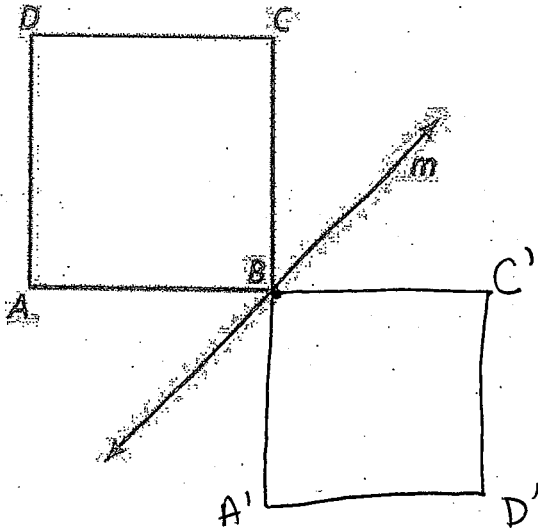
Geometry Transformations

$R_{P,A}$ = Rotation about P
angle A

Rigid Transformations Off the Grid

R_l = reflection over line l

1. Reflect square $ABCD$ in line m and label A' , B' , C' , D' on the image.



Describe how each vertex of the image relates to the corresponding vertex of the original square.

m is the \perp bisector of $\overline{AA'}$, $\overline{CC'}$, $\overline{DD'}$

B stayed the same because it is on the line of reflection.

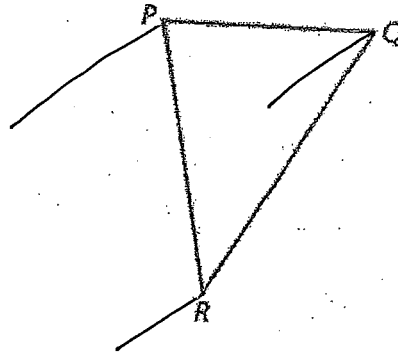
②

||:z

2. Use triangle PQR and the arrow shown below to translate the triangle as given by the arrow. Label $P'Q'R'$ on your sketch.

A ruler + line of reflection are parallel*

(use the same length)



Describe how each vertex of the image triangle relates to the corresponding vertex on the original triangle.

$$\overline{QQ'} \cong \overline{PP'} \cong \overline{RR'} \cong a$$

$$\overline{QQ'} \parallel \overline{PP'} \parallel \overline{RR'} \parallel a$$

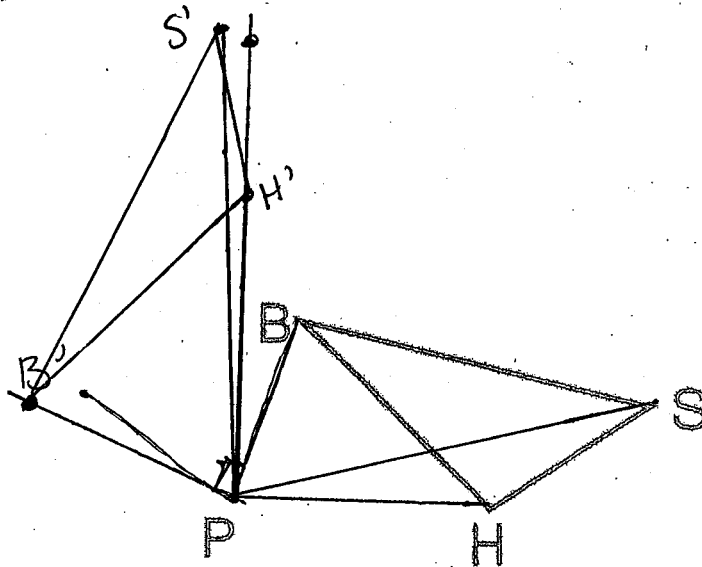
3. Use triangle BHS and point P below to draw the image of triangle BHS after a counterclockwise rotation of 90° about point P .

Connect B to P

Draw a segment to create a $90^\circ \angle$ (equal distance to line \overline{BP})

Place B' at the end of $\overline{PB'}$.

Repeat for other points.

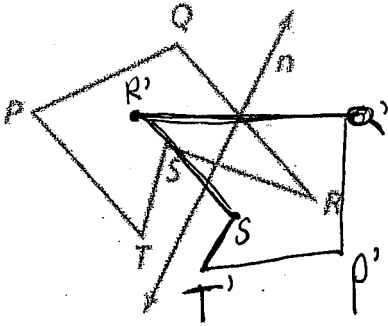


Describe how each vertex of the image triangle relates to the corresponding vertex on the original triangle.

$$\angle HPH', \angle B'PB, \angle SPS' \cong 90^\circ$$

line segments are congruent

4. Use the diagram below. Draw the image of polygon $PQRST$ after a reflection in line n . Label all corresponding image points on your sketch.



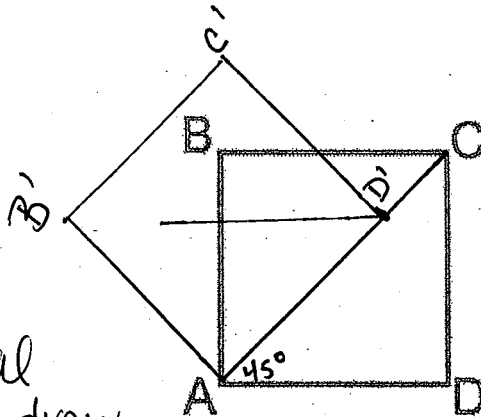
5. Draw the image of square $ABCD$ under a 45 degrees counterclockwise rotation about point A . Label all corresponding image points on your sketch.

① Draw a diagonal across the sq., bisecting the 90° .

② Measure the length of \overline{AD} .

③ Find where D' is on the diagonal using the length of D' .

④ draw the rest of the segments at 90° from the $(DC', A'B')$



6. Draw the image of rectangle $ABCD$ under a translation that matches point D to D' . Label all corresponding image points on your sketch.

