

Name _____

Date _____

Geometry Lesson 14 Reflections

I can construct the line of reflection.

Warm up.

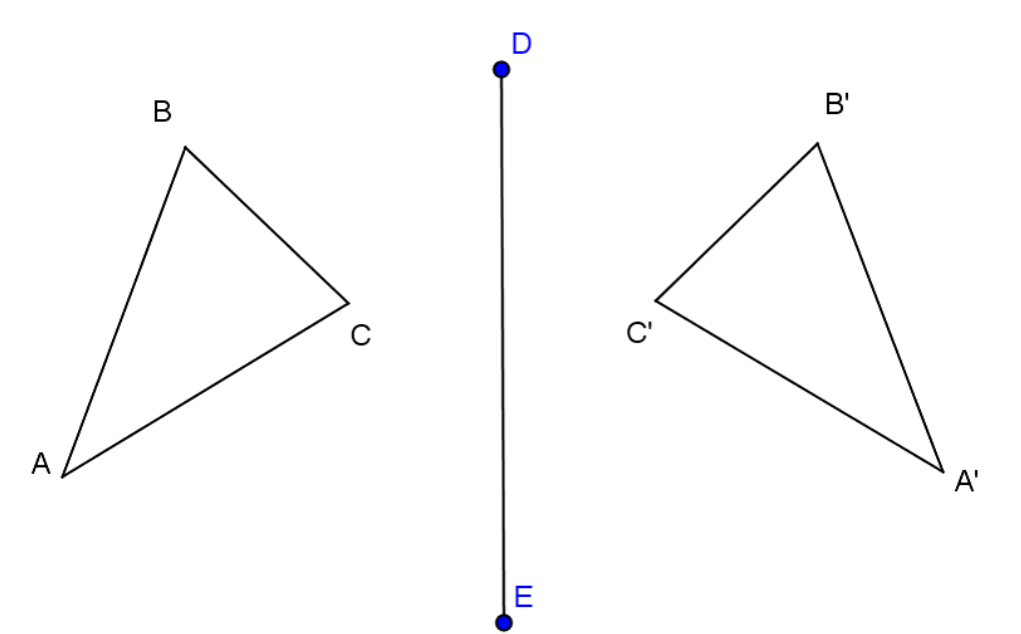
$\triangle ABC$ is reflected across DE and maps onto $\triangle A'B'C'$.

Use your compass and straightedge to construct the perpendicular bisector of each of the segments connecting A to A' , B to B' , and C to C' . What do you notice about these perpendicular bisectors?

Label the point at which $\overline{AA'}$ intersects DE as point O .

a. What is true about AO and $A'O$?

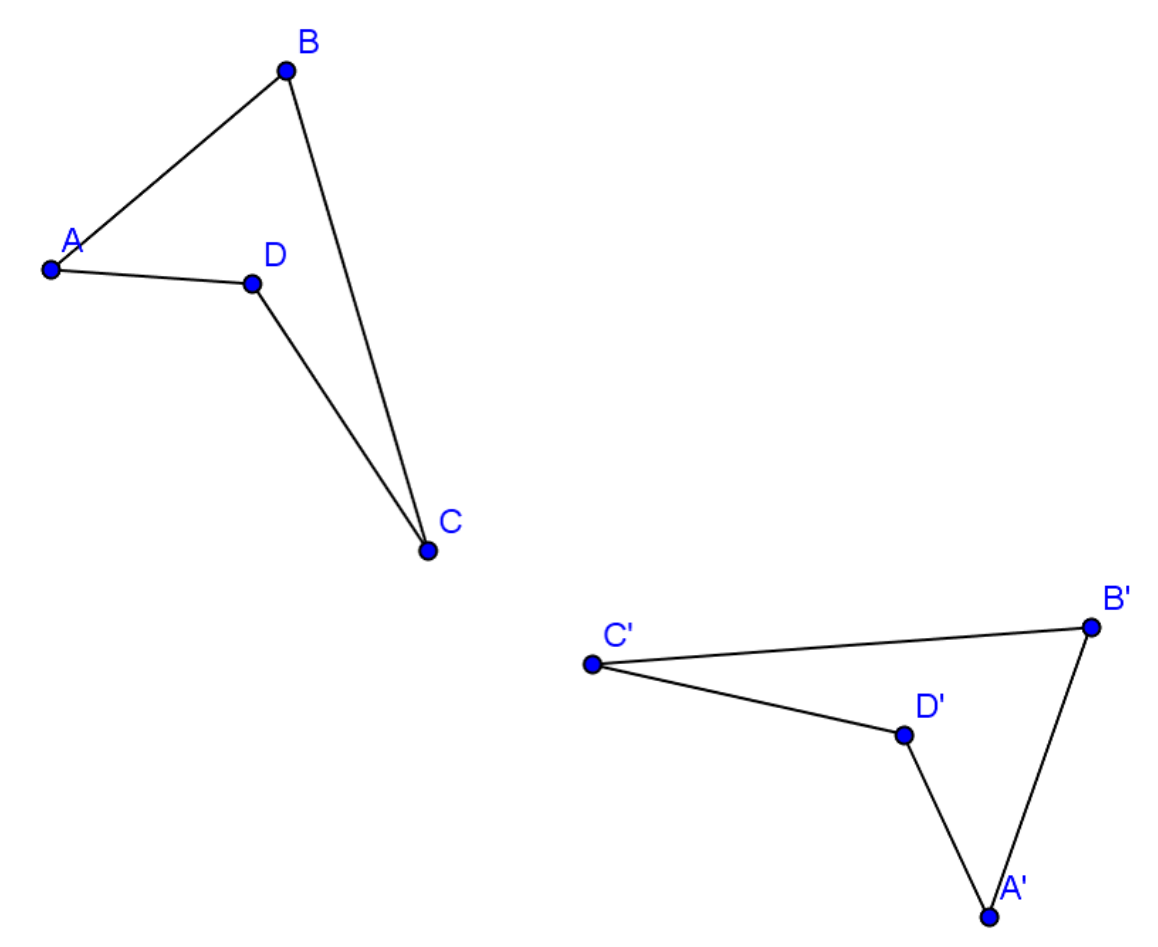
b. How do you know this is true?



Ex1:

Construct the segment that represents the line of reflection for quadrilateral $ABCD$ and its image $A'B'C'D'$.

What is true about each point on $ABCD$ and its corresponding point on $A'B'C'D'$?



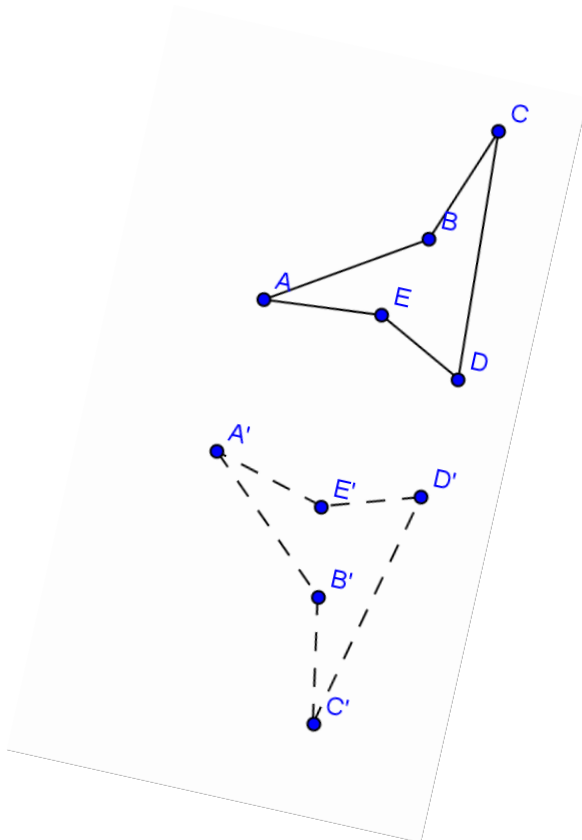
Definition:

Reflection: For a line l in the plane, a *reflection across l* is the transformation r_l of the plane defined as follows:

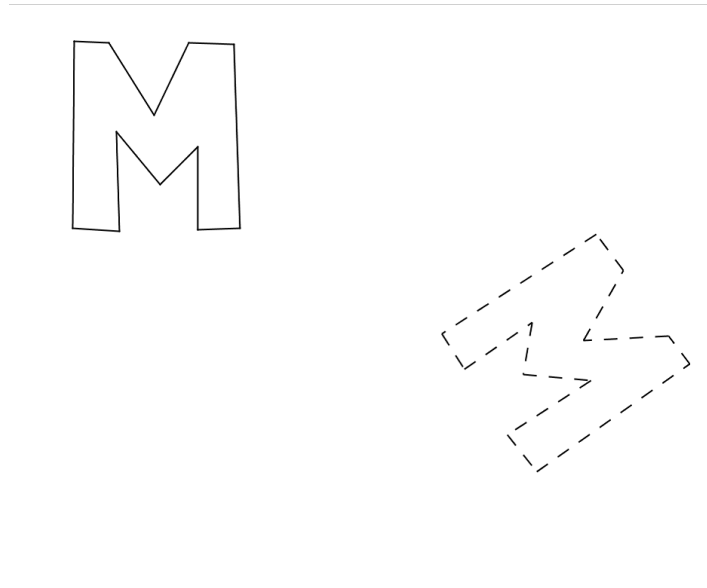
1. For any point P on the line l , $r_l(P) = P$, and
2. For any point P not on l , $r_l(P)$ is the point Q so that l is the perpendicular bisector of the segment PQ .

Examples 2–3

Construct the line of reflection across which each image below was reflected.



3.



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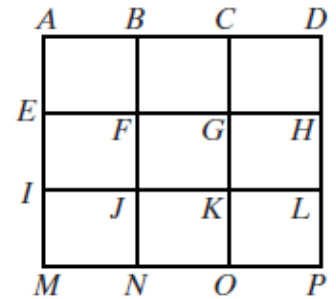
Geometry

Rigid Motions cont'

Homework.

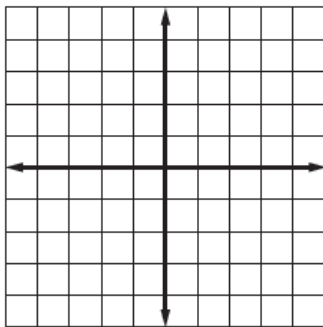
1. The diagram consists of nine congruent rectangles. Under a translation, the image of A is G . Find the image of each of the given points under the same translation.

a. J b. B c. I d. F e. E

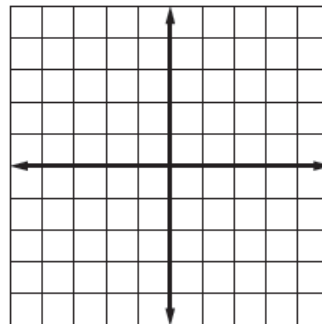


Graph each figure and its image after the specified rotation about the origin.

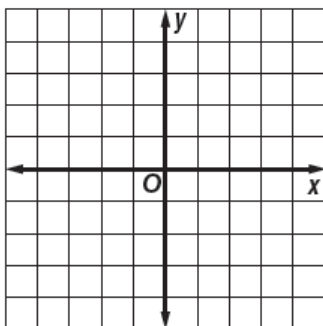
3. $\triangle STU$ has vertices $S(2, -1)$, $T(5, 1)$ and $U(3, 3)$; 90°



4. $\triangle DEF$ has vertices $D(-4, 3)$, $E(1, 2)$, and $F(-3, -3)$; 180°



5. quadrilateral $WXYZ$ has vertices $W(-1, 8)$, $X(0, 4)$, $Y(-2, 1)$ and $Z(-4, 3)$; 180°



6. trapezoid $ABCD$ has vertices $A(9, 0)$, $B(6, -7)$, $C(3, -7)$ and $D(0, 0)$; 270°

