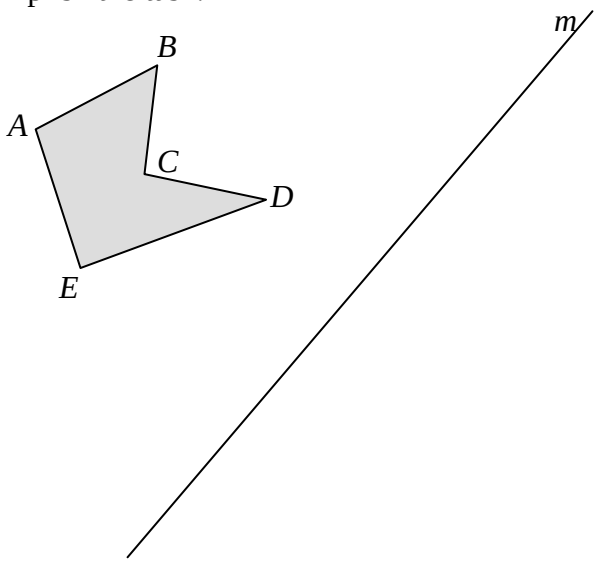
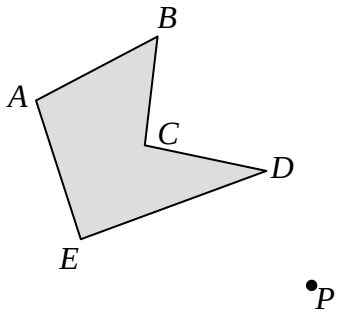
Class Activity for 11-2: Exploring Transformations

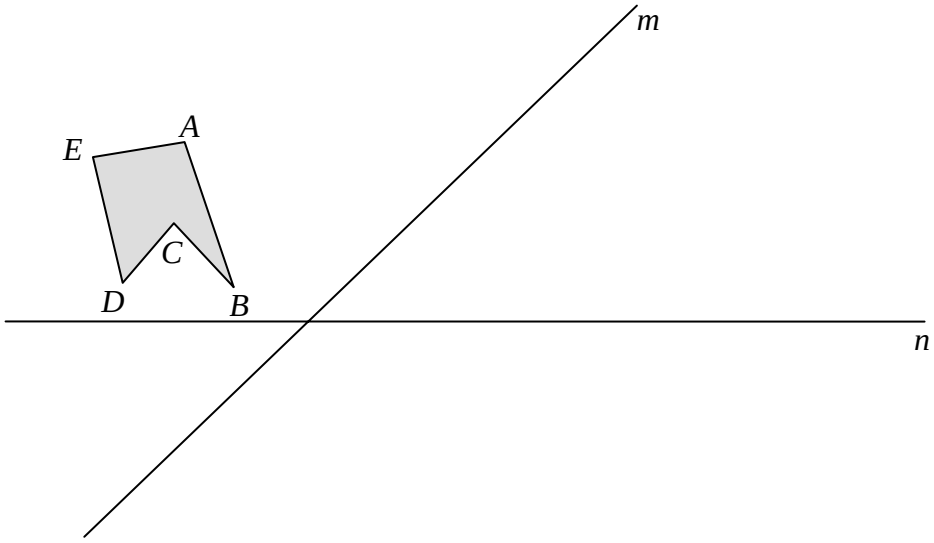
1. Thinking about the idea of reflection, and comparing this to work done on dot paper, devise a method to use compass, straightedge, and protractor (no ruler!) to find the image of this polygon for a reflection about line *m*. You should produce the image (carefully!) and also general instructions that could tell someone else how to accomplish the task.



2. Think about the idea of rotations, and devise a method to rotate this polygon 60˚ clockwise about point *P*. Again, you should produce the image (carefully!) and also general instructions that could tell someone else how to accomplish the task.



3. In this diagram find the image of *ABCDE* for the reflection across *m* (call the image $A'B'C'D'E'$) followed by the reflection of $A'B'C'D'E'$ across *n*, and call the final image $A''B''C''D''E''$. The final image $A''B''C''D''E''$ can be produced with *one* transformation on the original polygon. Completely describe what transformation of *ABCDE* would produce the same image $A''B''C''D''E''$.



4. Repeat the actions above using the diagram below. The lines are parallel. Again, what *single* transformation of *ABCDE* would produce the same image $A''B''C''D''E''$?