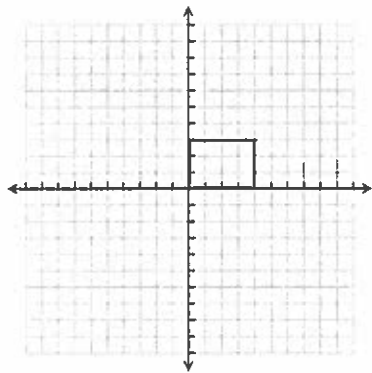


Given a center and a scale factor, verify experimentally, that when dilating a figure in a coordinate plane, a segment of the pre-image that does not pass through the center of the dilation, is parallel to its image when the dilation is performed. However, a segment that passes through the center remains unchanged.

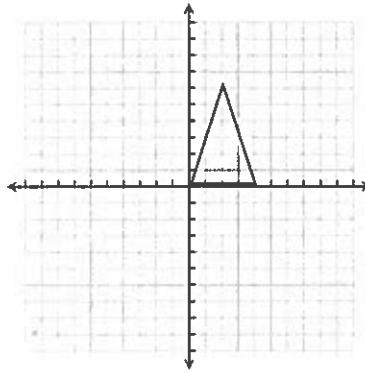
PROBLEMS Given the figure dilate the figure by the factor shown. The center of dilation is the origin. Label all points before and after the dilation.

1. Dilate by a factor 2

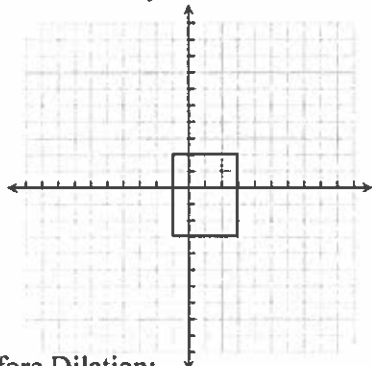


Before Dilation: _____
 After Dilation: _____

2. Dilate by a factor $\frac{1}{2}$

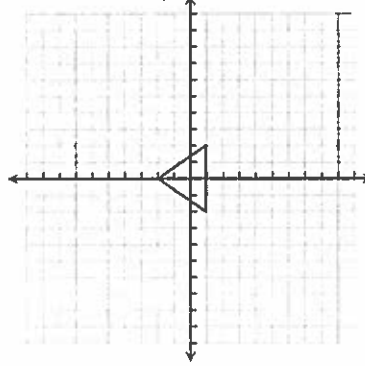


3. Dilate by a factor of 2

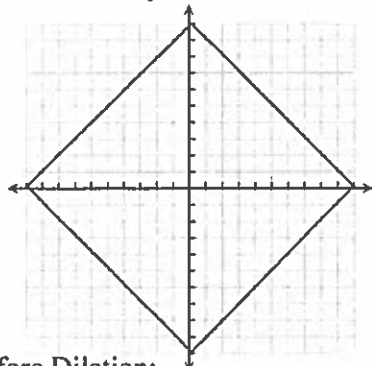


Before Dilation: _____
 After Dilation: _____

4. Dilate by a factor of 3

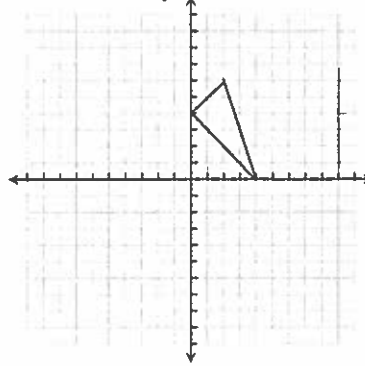


5. Dilate by a factor of $\frac{1}{2}$

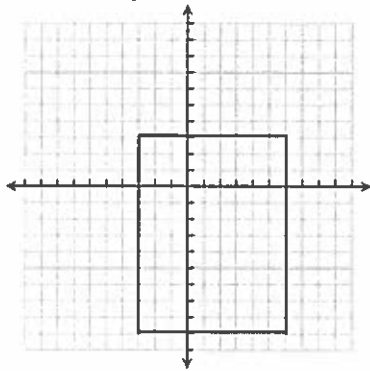


Before Dilation: _____
 After Dilation: _____

6. Dilate by a factor of $\frac{1}{2}$

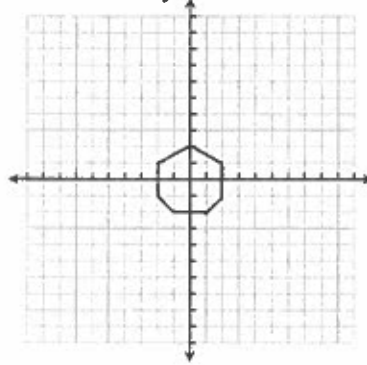


7. Dilate by a factor of $\frac{1}{3}$

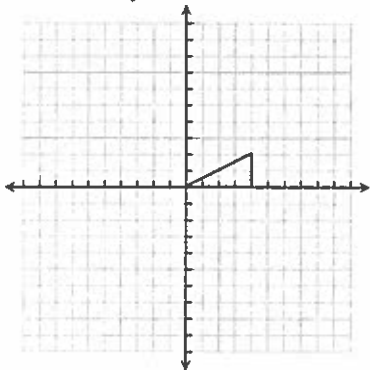


Before Dilation: _____
 After Dilation: _____

8. Dilate by a factor of 4

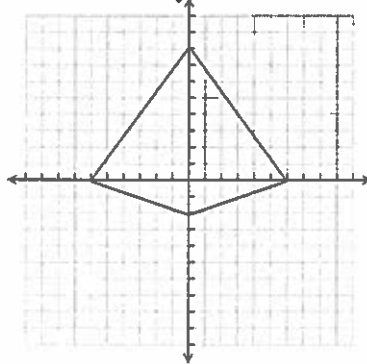


9. Dilate by a factor of 2

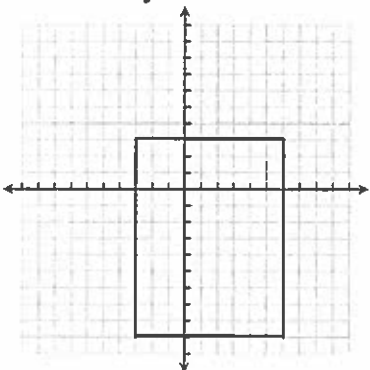


Before Dilation: _____
 After Dilation: _____

10. Dilate by a factor of $\frac{1}{2}$

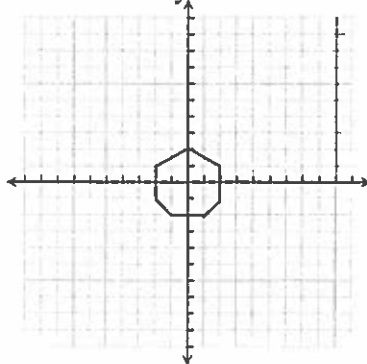


11. Dilate by a factor of $\frac{1}{2}$

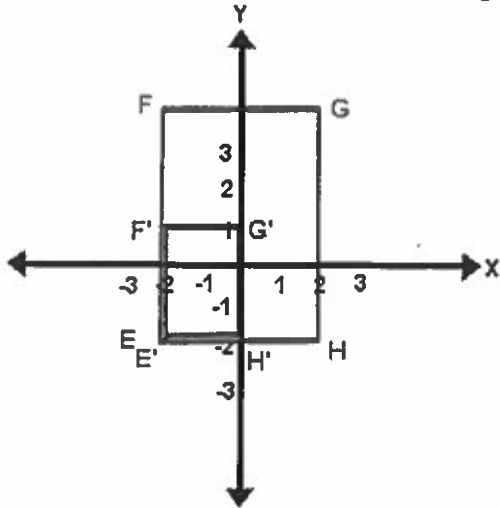


Before Dilation: _____
 After Dilation: _____

12. Dilate by a factor of 2



When the center of dilation is **not** the origin you have to proceed as outlines below.



PROBLEM: Draw the dilation image of rectangle EFGH with the center of dilation at point E and a scale factor of $1/2$.

OBSERVE: Point E and its image are the same. It is important to observe the distance from the center of the dilation, E, to the other points of the figure. Notice $EF = 6$ and $E'F' = 3$.

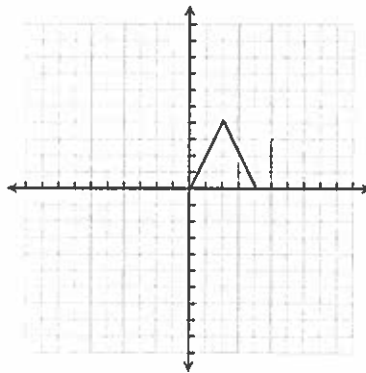
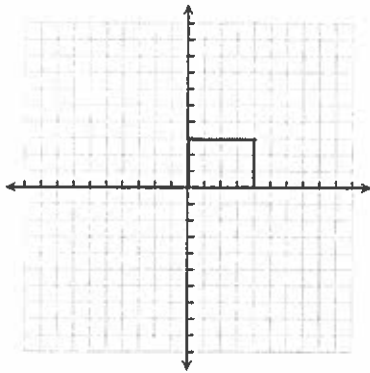
HINT: Be sure to measure distances for this problem.

PROBLEMS:

Given the figure and the center of dilation dilate the figure by the factor shown.

9. Dilation factor 2, dilation center (4,0).

10. Dilation factor $1/2$, dilation center (2,4).



11. Dilate by a factor of $1/2$, dilation center (10,0)

12. Dilate by a factor of $1/2$, dilation center (2,6)

