# Dilation From A Point Not The Origin
Dilate the figure with given scale factor (k) and center.

1. Dilate by k = 2 , center (3,4)

Distance From Center

$A(-5,0) \rightarrow A'(-10,0)$

$B(-1,-2) \rightarrow B'(-2,-4)$

2. Dilate by k = 3/2, (0,1)

$3 \cdot \frac{3}{2}$

Distance From Center

$R(\rightarrow 2, \uparrow 1) \rightarrow R'(3, 1.5)$

$D(\leftarrow 2, \uparrow 3) \rightarrow D'(3, 4.5)$
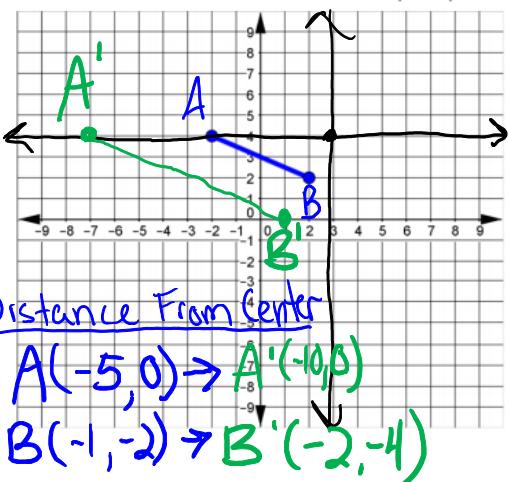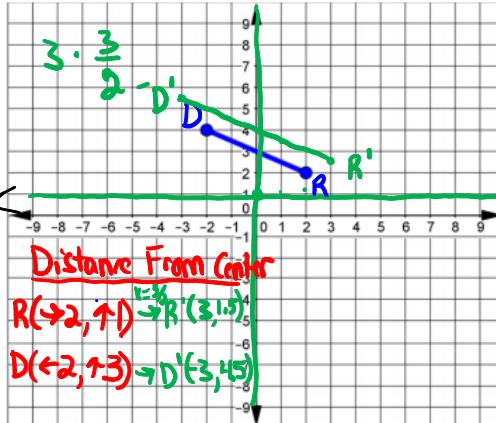
3. Dilate by k = 2, center (4,6)

$R = (-6, 2)$
$M = (2, 4)$
$\times 2 R' = (-12, 4)$
$\times 2 M' = (-4, 8)$
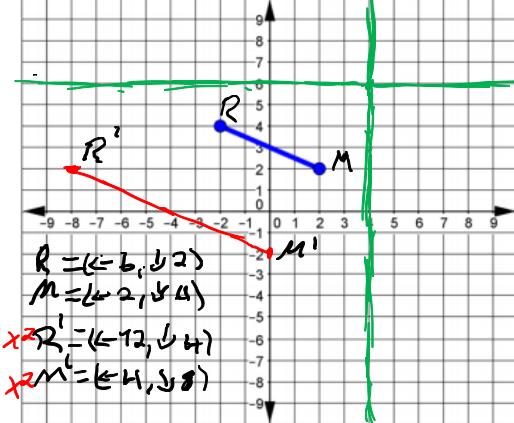
4. Dilate by k= 1/2 , center (2, 2)
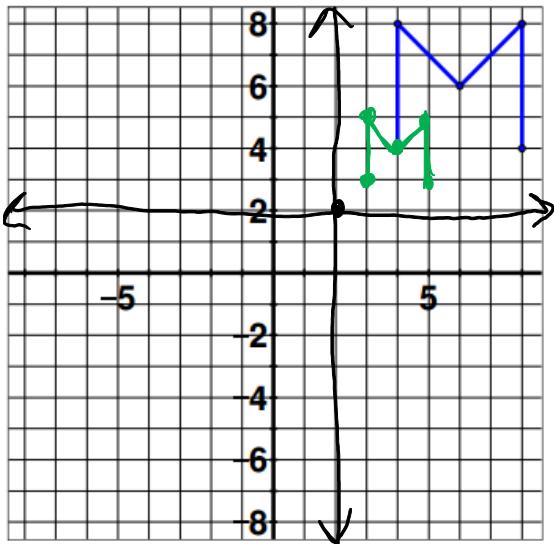
5. Dilate by k = 3, center (6,4)

Distance from Center

$A(-4,0) \rightarrow A'(-12,0)$

$B(-4,-2) \rightarrow B'(-12,-8)$

$C(-2,-2) \rightarrow C'(-6,-6)$

6. Dilate by k = ½, center (-6,2)

Distance From Center

$C(2,2) \rightarrow C'(4,1)$

$A(8,0) \rightarrow A'(4,0)$

$T(10,0) \rightarrow T'(5,0)$

7. Dilate by k = ¾, center (0,0)

Distance From Center

$H(4,4) \rightarrow H'(3,3)$

$O(4,8) \rightarrow O'(3,6)$

$R(6,6) \rightarrow R'(4.5, 4.5)$

$S(8,8) \rightarrow S'(6,6)$

$E(8,4) \rightarrow E'(6,3)$
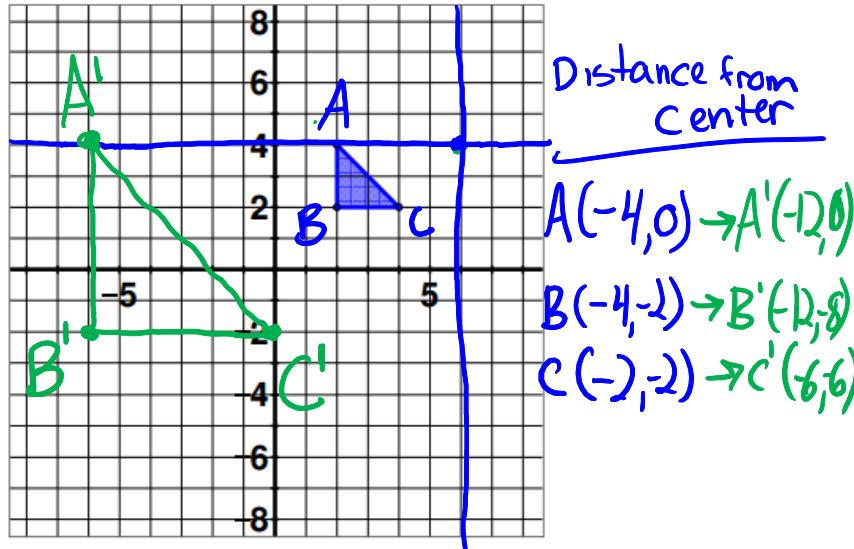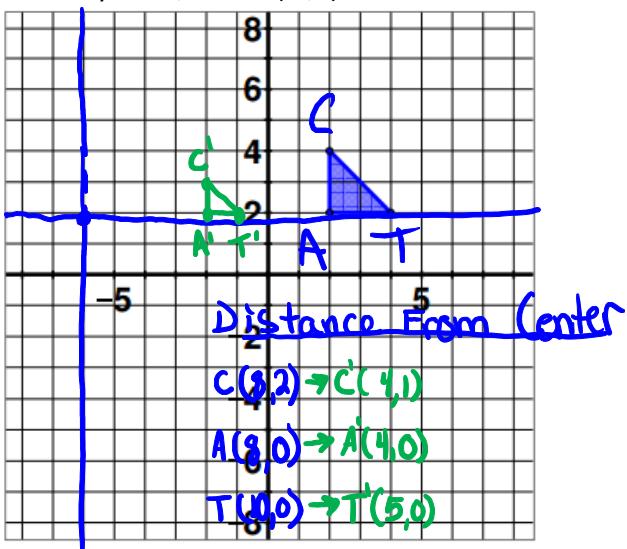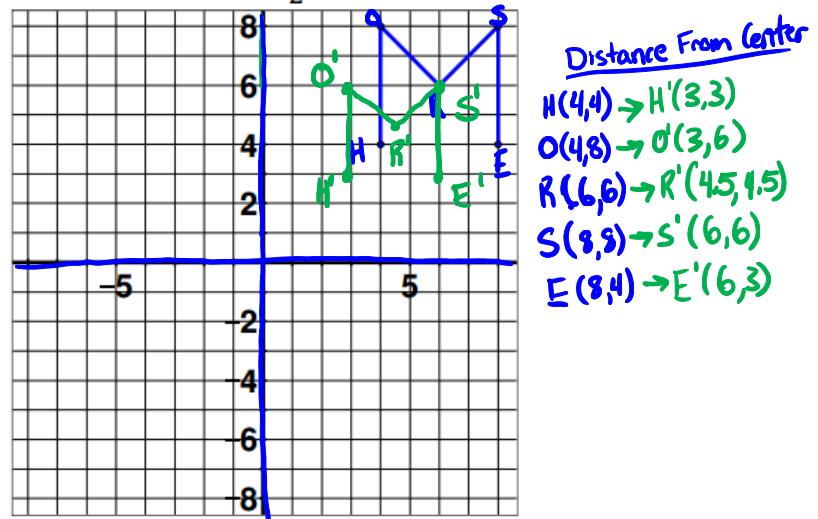
Dilation From A Point Not The Origin

Ex. 1 Dilate the following image at k = 2 and center at (-3,4)
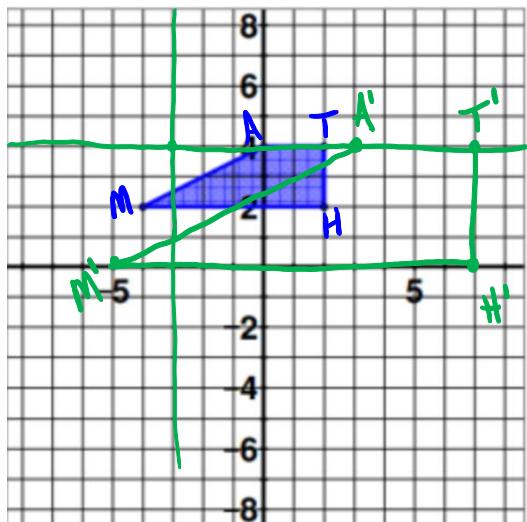
$M(-1,2) \rightarrow M'(-2,4)$
$A(3,0) \rightarrow A'(6,0)$
$T(5,0) \rightarrow T'(10,0)$
$H(5,-2) \rightarrow H'(10,-6)$

Ex. 2 Dilate the following image with a center at (6,7) and k= 3
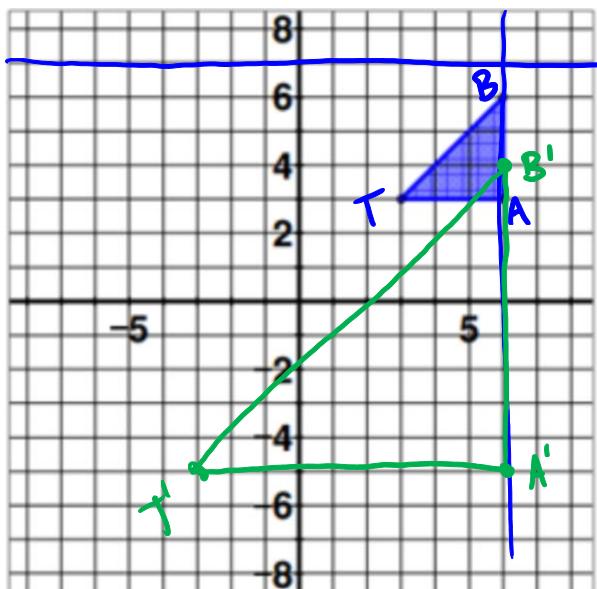
Distance From Center

$B(0,-1) \rightarrow B'(0,-3)$
$A(0,-4) \rightarrow A'(0,-12)$
$T(-3,-4) \rightarrow T'(-9,-12)$

Ex. 3 Dilate the following image with a center at (0,6) and k $= \frac{1}{3}$

Distance From Center

$D(0,6) \rightarrow D'(0,2)$
$O(0,3) \rightarrow O'(0,1)$
$G(-3,3) \rightarrow G'(-1,1)$