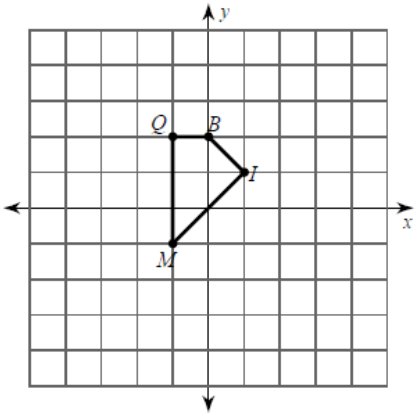
Math 2 Unit 6 Worksheet 5
Dilations Centered at (0,0)

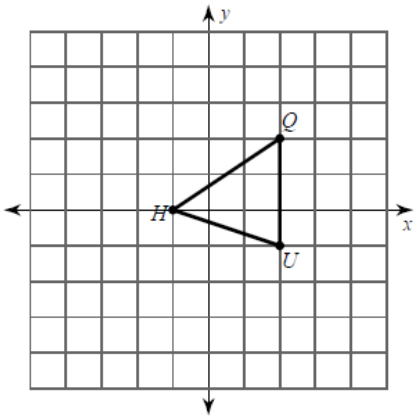
Name:_____
Date:_____ **Per:**_____

[1-4] Determine if the dilation is a reduction or enlargement of the figure using (0,0) as the center of dilation. Graph the image of the figure using the dilation given.

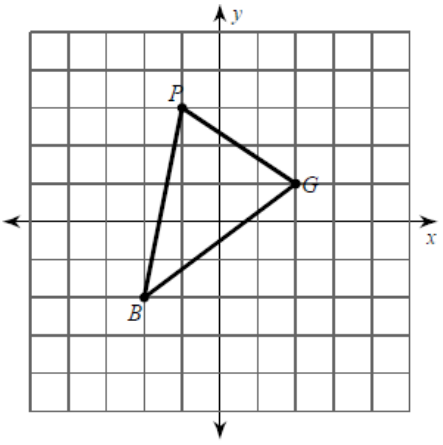
1. Dilation of 2: _____



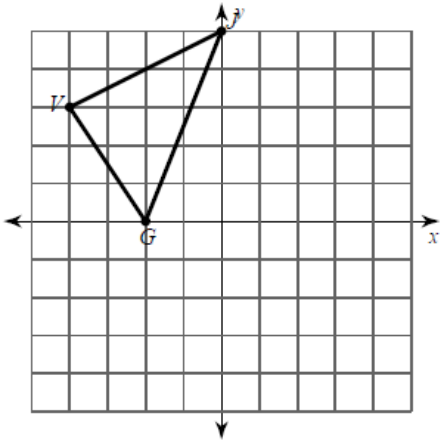
2. Dilation of 0.5: _____



3. Dilation of $\frac{3}{2}$: _____

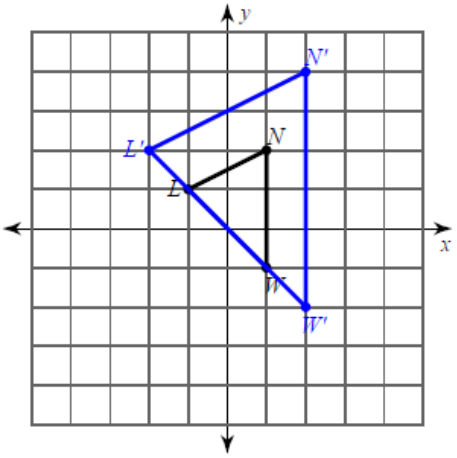


4. Dilation of $\frac{1}{2}$: _____

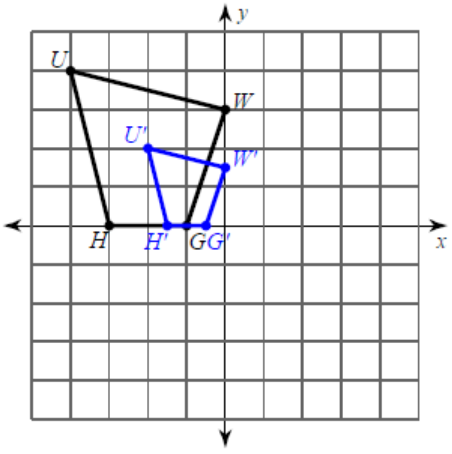


[5-7] Write a rule to describe each dilation.

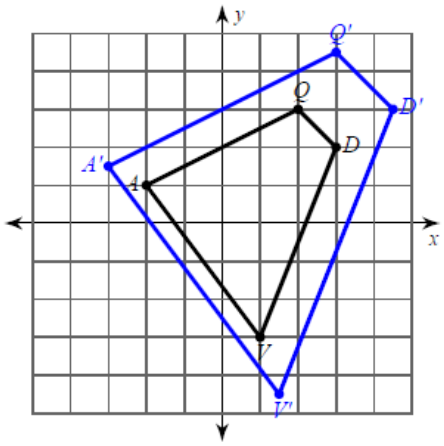
Example
Rule: $(x\ ,\ y) \rightarrow (2x\ ,\ 2y)$



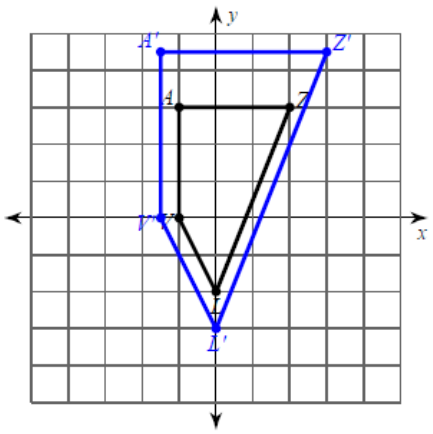
5. Rule: (____, ____) → (____, ____)



6. Rule: (____ , ____) → (____ , ____)



7. Rule: (____ , ____) → (____ , ____)



[8-12] Determine if the scale factor will reduce or enlarge the figure. Find the coordinates of the vertices of each figure after the given dilation.

8. Dilation of 2: _____
$W\ (-2\ ,-1)$; $E\ (-2\ ,1)$; $J\ (2\ ,1)$; $X\ (2\ ,0)$

W'(____ , ____); E'(____ , ____); J'(____ , ____); X'(____ , ____)

9. Dilation of $\frac{3}{2}$: _____
$E\ (-2\ ,0)$; $K\ (1\ ,2)$; $Y\ (3\ ,-2)$

E'(____ , ____); K'(____ , ____); Y'(____ , ____)

10. Dilation of $\frac{5}{2}$: _____
$F\ (-1\ ,1)$; $Z\ (2\ ,2)$; $E\ (0\ ,-1)$

F'(____ , ____); Z'(____ , ____); E'(____ , ____)

11. Dilation of $\frac{1}{2}$: _____
$N\ (-1\ ,-3)$; $C\ (0\ ,-2)$; $I\ (3\ ,-5)$

N'(____ , ____); C'(____ , ____); I'(____ , ____)

[12-14] Write a rule to describe each dilation.

Example: $G\ (2\ ,-4)$; $A\ (1\ ,-1)$; $L\ (2\ ,-1)$; $T\ (3\ ,-4)$
$G'\ (0.5\ ,-1)$; $A'\ (0.25\ ,-0.25)$; $L'\ (0.5\ ,-0.25)$; $T'\ (0.75\ ,-1)$ Rule: $(\ x\ ,\ y\ ) \rightarrow (\frac{1}{4}x\ ,\ \frac{1}{4}y)$

12. $S\ (-4\ ,-1)$; $A\ (-3\ ,4)$; $X\ (0\ ,1)$
$S'\ (-12\ ,-3)$; $A'\ (-9\ ,12)$; $X'\ (0\ ,3)$ Rule: (x , y) → (____ , ____)

13. $H\ (-2\ ,0)$; $Y\ (-1\ ,4)$; $B\ (3\ ,1)$
$H'\ (-0.5\ ,\ 0)$; $Y'\ (-0.25\ ,1)$; $B'\ (0.75\ ,0.25)$ Rule: (x , y) → (____ , ____)

14. $U\ (-4\ ,-5)$; $Y\ (-5\ ,-1)$; $P\ (-4\ ,-1)$; $K\ (-3\ ,-3)$
$U'\ (-2\ ,-2.5)$; $Y'\ (-2.5\ ,-0.5)$; $P'\ (-2\ ,-0.5)$; $K'\ (-1.5\ ,-1.5)$ Rule: (x , y) → (____ , ____)