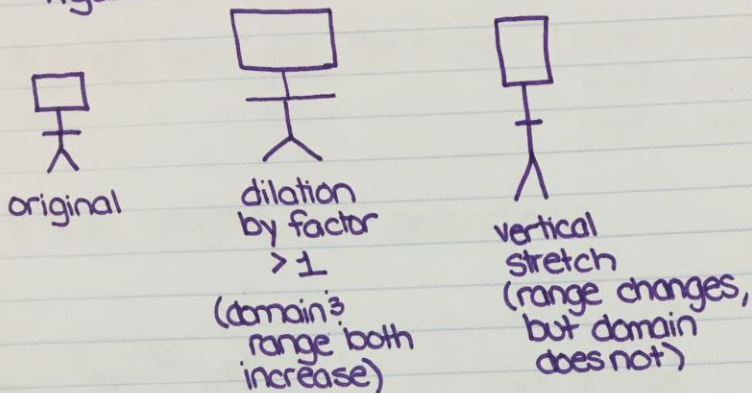


Dilations ← Not an isometry!!

Unit 2  
Day 10

A dilation figure stretches or shrinks the original (both domain AND range are affected)



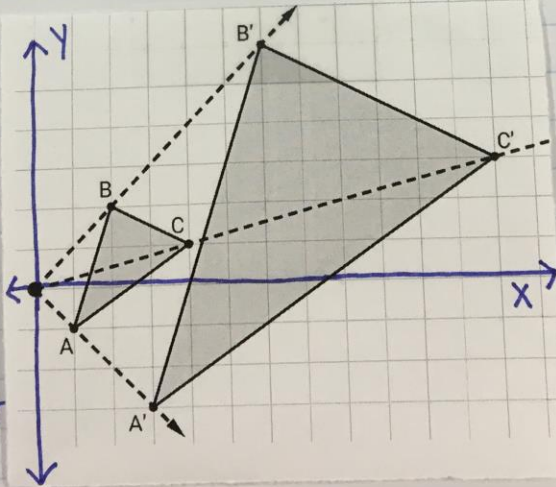
- A dilation description should include:
- the scale factor (amount by which pre-image grows or shrinks)
  - the center of dilation (a point)
  - description of dilation - enlargement or reduction

enlargement: scale factor  $> 1$   
reduction: scale factor:  $0 < \text{scale factor} < 1$

Graph:  
A(1,-1)  
B(2,2)  
C(4,1)

Dilate by factor of 3 with center of (0,0) ←

let's name this O.



\* Note:  
 $OB' = 3 \cdot OB$   
 $OC' = 3 \cdot OC$   
 $OA' = OA \cdot 3$   
☺

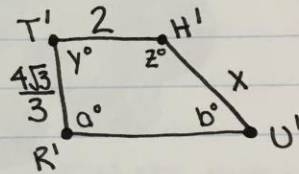
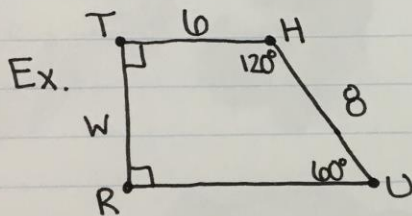
\* what about angles?  
↓  
Protractor!!

# Dilations Create Similar Figures

↑  
Same Shape, Different Sizes

\* Angle Sizes are the same ( $m\angle A = m\angle A'$ ,  
 $m\angle B = m\angle B'$ ,  
 $m\angle C = m\angle C'$ )

\* Side Lengths are proportional.



$$W = \frac{4\sqrt{3}}{3}$$

$$X = \frac{8}{3}$$

$$Y = 90^\circ$$

$$a = 90^\circ$$

$$b = 60^\circ$$