**6.7 Similarity Transformation (Change to a figure)**

**3 Congruence Transformations:**

**What happens in each of these transformations?**

**Translation-**

**Rotation-**

**Reflection-**

**Pre-image(Original) Image (New)**

**Image** $≅$ **Pre-image**

**Similarity Transformation:**

**Dilation- Reduction/Englargement of a figure**

**Image**$\~$**Pre-image**

**The new figure(image) is similar to the original (pre-image) and the scale factor of the image to the pre-image is equal to the scale factor of dilation.**

**For Dilation, you need a center point and a scale factor= K**

**Dilation on a coordinate plane. . .**

**Center at (0,0)**

**Scale Factor= K**

**(x, y) (Kx, Ky)**

**If reduction, K is between 0 and 1, 0<K<1.**

**If enlargement, K is great than 1, K>1.**

**\*\*If K=1, then the image will be congruent to the pre-image.**

**Ex. Graph** $∆ABC $ **with A(2, 1), B(1, -1), C(4, -1).**

**(The pre-image)**

**Dilate** $∆ABC $ **with K=2.**

**A’( , )**

**B’( , )**

**C’( , )**

**Notice. . .**

**BC= 3 and B’C’= 6, so** $\frac{B'C'}{BC}$ **=**$\frac{6}{3}$ **= 2**