1. Describe what is affine transformation?

Affine transformation is a transformation that combines linear transformations and translations that when applied, preserves parallel lines even after transformation and finite points are mapped into finite points. Affine transformation doesn’t necessarily preserve the angle between lines or distances between points, but it does preserve the ratios.

1. Given the following 2-D Affine Transformation, an image of a spaceship is placed inside an imaginary window.
2. Show a sequence of affine transformations that can be applied to the left image spaceship to generate the right image.

**First translate to the origin. Get center of image.**

**X Center = (8+6)/2=7**

**Y Center = (-3+-5)/2= -4**

**Center (7,-4)**

**Use translation formula**

**Now rotate clockwise by 90 degree about origin using given rotation equation**

**Now we translate to final destination**

**2B.) From your result of part a, compute a single transformation matrix that can be applied to the left image to produce the right image in one single step. We refer to this as “Combo” matrix in our lecture.**

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