Mat 345 Project

Part 3.

D. An affine transformation is a distortion or mapping that keeps the same properties of points, straight lines, and planes. This type of transformation also has one key factor, it maintains parallel lines parallel after the given transformation. Types of affine transformations include resizing, rotating, and cropping. Typically, these transformations are used to fix geometric distortions or deformations that may happen when you take a photo. People always edit photos to align the photo with the correct size, rotation, and what is being shown. This process is done through the basic affine transformations.

Oblique anamorphisms classify as affine transformations because it is based off of perspective. An image that has classifies as an oblique anamorphism is changed and distorted from the original image through affine transformations. These transformations are typically rotations, translations, dilations, and shears.

A rotation is simply turning an object or image by an angle around a specific point or axis.

Translations are just moving an object or image without effecting its distortion.

Dilation is the same idea of resizing and image. It is blowing up or shrinking an image by some factor.

A shear is when a specific part of the object or image is being held stationary while the points parallel to the line are shifted by some distance. This distance is proportional to the perpendicular distance from the line. Performing a shear transformation does not change the figure or image’s area.

Do they submit to linear transformation’s: a linear transformation

<http://mathworld.wolfram.com/AffineTransformation.html>

<https://www.mathworks.com/discovery/affine-transformation.html>