**Geometric Transformations: Translations (“Slides”), Reflections (“Flips”), and Rotations (“Turns”)**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1. Translations**

(a)Draw the vector that translates kite EFGH to kite E’F’G’H’.

Write this same vector in algebraic notation: (x, y) 🡪 ( \_\_\_\_\_ , \_\_\_\_\_ )

 (b) Carry out an (x, y) 🡪 (x – 10, y + 5) translation of the following triangle.

**2. Reflections**

Reflect the following triangle over the

 (a) x-axis (b) y-axis



**3. Rotations**

 Find the center of rotation and the angle of rotation that maps the gray letter F onto its red image.



 If the origin is the center of rotation, find the angle of rotation that maps figure A onto

 B \_\_\_\_\_ C \_\_\_\_\_ and D \_\_\_\_\_ .



4. Thoroughly discuss the symmetries of the following diagrams (point, turn, and line) with details about the angles of rotation and the lines of symmetry.

 (a) (b)