

## Station #3

### Quadrilaterals

$E = (1, 2)$ ,  $F = (2, 5)$ ,  $G = (5, 6)$  and  $H = (4, 3)$ .

1. Find the midpoints of the diagonals of EFGH. What conclusion can you make?
2. Find the slopes of the diagonals of EFGH. What conclusion can you make?
3. Find the lengths of each of the four sides of EFGH. What conclusion can you make?
4. Find the slopes of each of the four sides of the quadrilateral EFGH. What conclusion can you make?
5. What geometric figure is quadrilateral EFGH?

$\overline{EF} = 2.4$   
 $\overline{GH} = 3.4$

Slope

2)  $\overline{EF} = 1$   
 $\overline{GH} = -1$

Diagonals are  $\perp$  since they have the same slope  
 (Parallelogram)

Diagonals are  $\perp$  since slopes  
 are opposite reciprocals

(Rhombus)

3)  $\overline{EF} = \sqrt{10}$   
 $\overline{FG} = \sqrt{10}$   
 $\overline{GH} = \sqrt{10}$   
 $\overline{HE} = \sqrt{10}$

All sides are  $\cong$  since they have  
 the same distance.

(Still just a Rhombus)

4)  $\overline{EF} = 3$   
 $\overline{FG} = \frac{1}{3}$   
 $\overline{GH} = 3$   
 $\overline{HE} = \frac{1}{3}$

Opposite sides are  $\parallel$  since  
 same slope

Consecutive sides are  $\perp$  since NOT  
 opposite reciprocal slopes.

(Not a Rectangle)

5) Rhombus