Name: _Key_

BEAR Quadrilateral

B(-1,4), E(2,5), A(3,2), R(0,1)

Calculate the <u>length and slope of each side</u> and from these calculations only determine what type of quadrilateral BEAR is.

$\overline{BE}$:
$\overline{EA}$: $\Big\}\ \cdot\sqrt{10}$
$\overline{AR}$:
$\overline{RB}$:

Slope $\overline{BE}$ & $\overline{AR}$ → $\frac{1}{3}$

Slope $\overline{EA}$ & $\overline{RB}$ → $\frac{-3}{1}$

$\perp$

$\perp$ angles
$\cong$ sides $=$ Square

OHMY Quadrilateral

O(-1,4), H(2,3), M(4,-3), Y(1,-2)

Calculate the <u>length and slope of each side</u> and from these calculations only determine what type of quadrilateral OHMY is.

$\overline{OH}$ & $\overline{MY} = \sqrt{10}$
$\overline{HM}$ & $\overline{OY} = \sqrt{40}$

↑
opposite
Sides
$\cong$

Slopes: $\overline{OH}$ → $-\frac{1}{3}$

$\overline{HM}$ → $\frac{-3}{1}$

$\overline{MY}$ → $-\frac{1}{3}$

$\overline{OY}$ → $\frac{-3}{1}$

Not $\perp$ only ∥
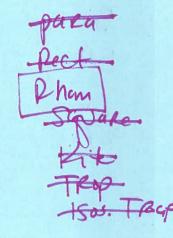
~~Para~~
~~Rect~~
~~Rhom~~ → ∦
~~Sqo~~

Parallelogram

WZRD Quadrilateral

W(0,3), Z(5,3), R(8,-1), D(3,-1)

Calculate the **length, slope, and midpoints** of the two <u>DIAGONALS</u> and from these calculations only determine what type of quadrilateral WZRD is.

$\overline{WR} = \sqrt{80}$ ⎤ ≢
$\overline{ZD} = \sqrt{20}$ ⎦

Slope $\overline{WR}$: $-\frac{1}{2}$ ⎤ ⊥
Slope $\overline{ZD}$: $\frac{2}{1}$ ⎦

Rhombus
Square
Kite

~~para~~
~~Rect~~
Rham
~~Square~~
Kite
~~TRAP~~
~~Isos. TRap.~~

Mdpt $\overline{WR}$: (4,1) ⎤ diagonals bisect each other
Mdpt $\overline{ZD}$: (4,1) ⎦ Parallelogram

$$\boxed{Rhombus}$$

AHSZ Quadrilateral

A(-2,1), H(2,2), S(5,-4), Z(1,-5)

Calculate the **length, slope, and midpoints** of the two <u>DIAGONALS</u> and from these calculations only determine what type of quadrilateral AHSZ is.

$\overline{AS}$: $\sqrt{74}$ ⎤ ≢ diagonals
$\overline{HZ}$: $\sqrt{50}$ ⎦

Slope $\overline{AS}$ → $\frac{-5}{7}$ ⎤ ⊥̸ diagonals
$\overline{HZ}$ → $\frac{-7}{-1} = \frac{7}{1}$ ⎦

mdpt: $\overline{AS}$ → $\left(\frac{3}{2}, -\frac{3}{2}\right)$ ⎤ diagonals bisect each
$\overline{HZ}$ → $\left(\frac{3}{2}, -\frac{3}{2}\right)$ ⎦ other ∴ para

$\boxed{Parallelogram}$
~~Rect~~
~~Rhom~~
~~Square~~
~~Kite~~
~~Trap~~
~~Isos. TRap.~~