Geometry Reflective Study Portfolio

Unit #2: Rigid Motions

(To receive full credit: This must be in the same folder as your SP#1!!!)

Section #1: Vocabulary (words and/or labeled diagrams)

Transformation	Rigid Motions	Line symmetry
Point symmetry	Reflection	Rotation
Translation	Image	Pre-image
Orientation	Isometry- • Direct - • Opposite-	
Composition	Invariant	Vector(translation vector)

Section #2: Formulas/Equations/Theorems

- **Re-write the <u>transformation rule sheet</u> I gave you in class. Include type of isometry.** *(U2D3 notes)*

Transformation	Isometry
Line Reflections	
Reflection in the **x-axis:**	
Reflection in the **y-axis:**	
Reflection in **y = x:**	
Reflection in **y = -x:**	
Rotations	
Rotation of **90⁰ about the origin:** **Positive angles go counterclockwise**	
Rotation of **180⁰ about the origin:** *(same as reflection in the origin)*	
Rotation of **270⁰ about the origin:**	
Translations	
Translation = $T_{(a,b)}$:	

Apply those rules!

Perform each rigid motion on the point (- 4, 5)

_____1. r_{x-axis} _____2. r_{y-axis} _____3. $r_{y=x}$

_____4. $r_{y=-x}$ _____5. $r_{y=2}$ _____6. $r_{x=-3}$

_____7. $R_{o,180^o}$ _____8. $R_{o,90^o}$ _____9. $R_{o,270^o}$

_____10. $T_{(-2,6)}$ _____11. $r_{y=0} \circ T_{(3,8)}$ _____12. $R_{o,-90^o}$

Check your answers on last page!

- **Write the composition that does a reflection <u>over the y-axis first then a rotation of 90° about the origin</u> using both types of notation. (U2D4 notes)**

  _____ $\circ$ _____ **(A)**

- **Write out the theorem(conjecture) for reflection over a pair of parallel lines. *(U2D4 notes)***

- **Write out the theorem(conjecture) for reflection over a pair of intersecting lines.*(U2D4 notes)***

Section #3: Key methods and concepts (write out the process and/or a solved example) *(U2D1 notes)*
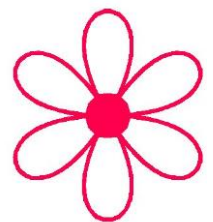- **Show <u>all the lines of symmetry</u> for each or <u>write none</u>.**

Isosceles Trapezoid   Ellipse   Parallelogram

Compare and Contrast the point symmetry for each:
Explain which figure has point symmetry and which does not have point symmetry. (WHY?)

- **Name the order and rotational symmetry for each:**
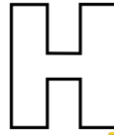
  a)

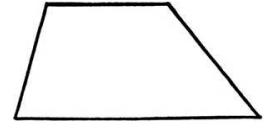 order_____

  degrees:_____

  b)

  order_____

  degrees:_____

  c)
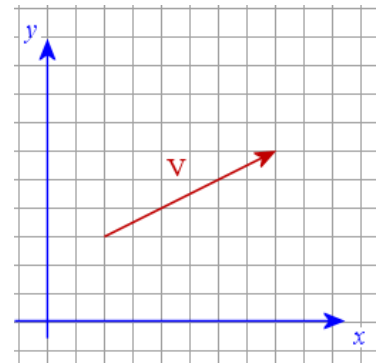
  order_____

  degrees:_____

  d)

  order_____

  degrees:_____

- **Explain _positive_ degrees of rotation and _negative_ degrees of rotation.**
  (ex. $R_{o, 90°}$ vs. $R_{o, -90°}$) (U2D2 notes)
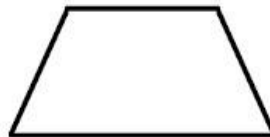
- **Vectors have _____ and _____.**

  Find the magnitude of the given vector: (U2D3 notes)
  Show work!

ANS. $\sqrt{45} = 3\sqrt{5}$

- **The line of reflection is the _____ of the segment connecting the corresponding points between pre-image and image.**

- **<u>CONSTRUCT</u> (<u>using compass and straightedge</u>) the vertical line of symmetry of the given image.**

Ans. 1)(-4, -5)	2) (4, 5)	3) (5, -4)	4) (-5, 4)	5) (-4, -1)	6) (-2, 5)
7) (4, -5)	8) (-5, -4)	9) (5, 4)	10) (-6, 11)	11) (-1, -13)	12) (5, 4)