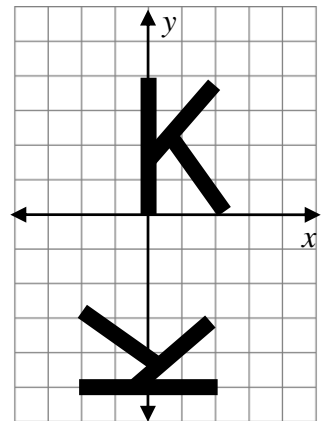


Geometry HW: Transformations - 7

Evaluate each of the following:

1. $r_{y\text{-axis}}(3, -4)$
 2. $R_{90^\circ}(3, -1)$
 3. $D_3(5, -2)$
 4. $T_{2, -5}(4, 2)$
 5. $R_{270^\circ}(2, 4)$
 6. $r_{y=x}(-5, 4)$
 7. $R_{180^\circ}(4, 2)$
 8. $R_O(-3, 2)$
 9. $D_{-4}(-2, 1/2)$
 10. $D_{1/2}(4, -3)$
 11. $r_{x\text{-axis}}(2, -6)$
 12. $r_{y=-x}(-5, 4)$
13. If $D_k(-9, 12) = (12, -16)$, find the value of k .
14. a. Under what dilation will the image of $(2, 4)$ be $(6, 12)$?
- b. Under what translation will the image of $(2, 4)$ be $(6, 12)$?
- c. Under a reflection in what point will the image of $(2, 4)$ be $(6, 12)$?
- d. Under a reflection in what line will the image of $(2, 4)$ be $(6, 12)$?
15. What are the coordinates of the image of the point $(5, 2)$ after a reflection in the line $x = 2$?
16. The image of the point $A(4, -2)$ after a reflection in line k is $(4, 10)$. Find the equation of line k .
17. Under a given translation, the image of $(4, 2)$ is $(6, -1)$.
- a. Find the image of $(-2, 5)$ under the same translation.
 - b. Find the *preimage* of $(3, -4)$ under the same translation.
18. a. What is the minimum rotation needed to carry a regular octagon onto itself?
- b. A regular polygon has a minimum rotation of 24° to carry the polygon onto itself. How many sides does it have?



19. Give a precise composition of transformations what will take the letter K above onto its image.

20. Describe precisely a sequence of transformations that will take $\triangle APE$ below onto its image $\triangle A'P'E'$.

