

Lesson 9.7 Warm Up

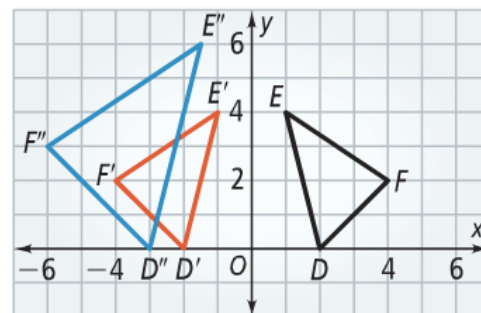
1. What are the coordinates of point $X(4, 9)$ after a rotation of 90 degrees?
2. What are the coordinates of point $Y(-1, 3)$ after a reflection across the line $y = 4$?
3. Is a triangle with side lengths of 2, 9, 10 a right, obtuse, or acute triangle?

Lesson 9.7 Similarity Transformations

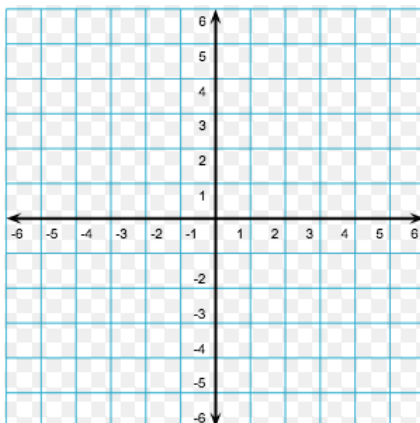
Essential Understanding: You can use compositions of rigid motions and dilations to help you understand the properties of similarity.

$\triangle DEF$ has vertices $D(2, 0)$, $E(1, 4)$, and $F(4, 2)$.

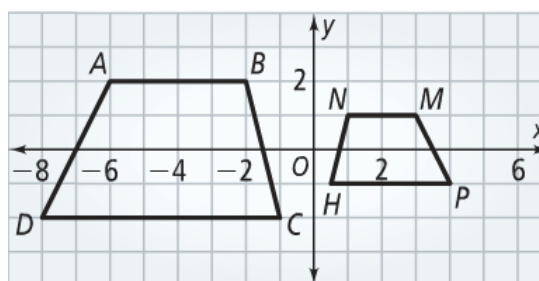
What is the image of $\triangle DEF$ when you apply the composition $D_{1.5} \circ R_{y\text{-axis}}$?



Ex. Triangle LMN has vertices $L(-4, 2)$, $M(-3, -3)$, and $N(-1, 1)$. Suppose the triangle is translated 4 units right and 2 units up and then dilated by a scale factor of 0.5 with center of dilation at the origin. Sketch the resulting image of the composition of transformation.



Ex. What is a composition of rigid motions and a dilation that maps trapezoid $ABCD$ to trapezoid $MNHP$?



Similarity transformations are transformations that have the same shape but different size.

Two figures are similar if and only if there is a similarity transformation that maps one figure onto the other.

Why do you suppose this works?

Ex. A new company is using a computer program to design its logo. Are the two figures used in the logo so far similar?

