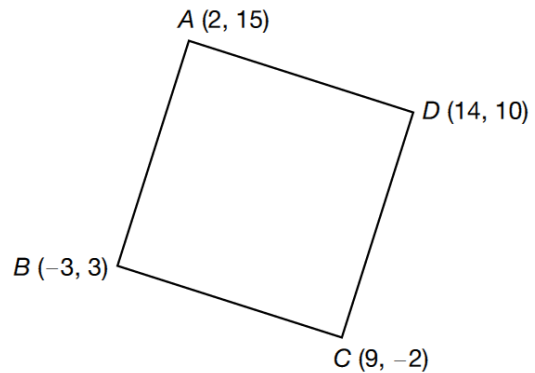


### 3.1 – Using Transformations to Determine Area

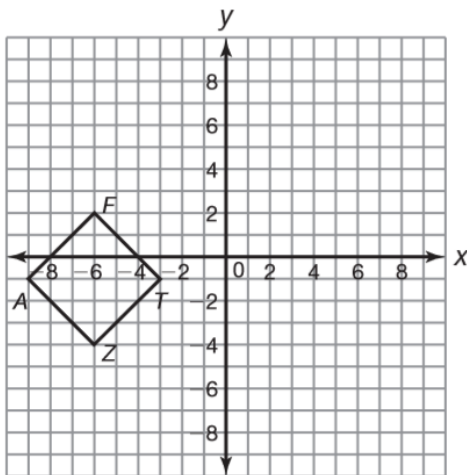
**Show all work on a separate sheet of paper.**

- Four points and their coordinates are given. Use the distance and slope formulas to show that quadrilateral  $ABCD$  is a square.
  - Find  $AB$ ,  $BC$ ,  $CD$ , &  $AD$ .
  - Find  $m_{AB}$ ,  $m_{BC}$ ,  $m_{CD}$  &  $m_{AD}$ .

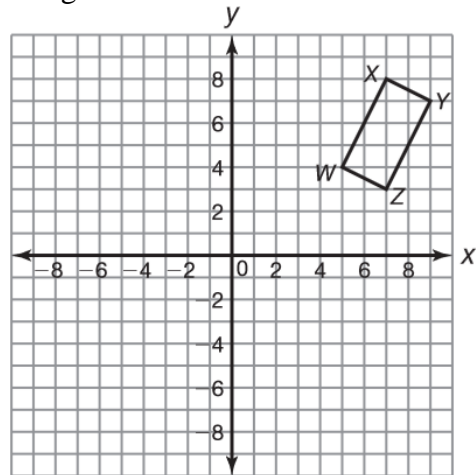


Translate each given rectangle or square such that one vertex of the image is located at the origin and label the vertices of the translated image. Calculate the perimeter and area of the image. Round your answer to the nearest hundredth, if necessary.

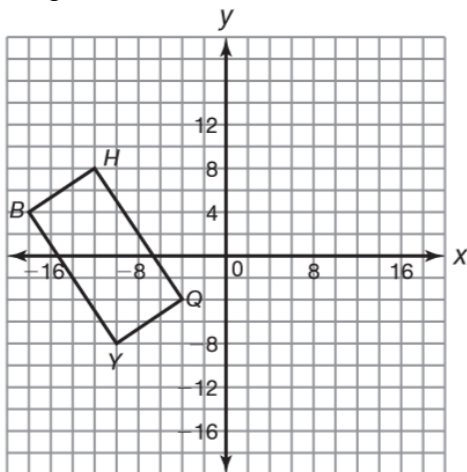
- Square  $AFTZ$



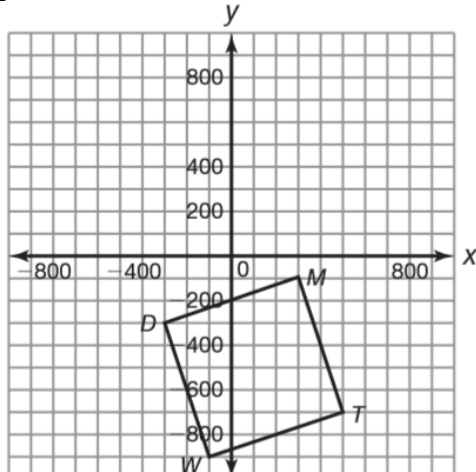
- Rectangle  $WXYZ$



- Rectangle  $BHQY$



- Square  $DMTW$



6. Olivia translates rectangle  $WXYZ$  vertically up 1 unit and horizontally to the right 4 units to produce the image  $W'X'Y'Z'$ . Thom translates the rectangle vertically up 6 units and horizontally to the right 5 units to produce the image  $W''X''Y''Z''$ .
- Would you prefer to use Olivia's translation or Thom's translation to determine the perimeter and the area of the rectangle? Explain your reasoning.
  - Calculate the perimeter of the rectangle. Show your work.
  - Calculate the area of the rectangle. Show your work.

