

# Math 213

## Sections 12.2

Key

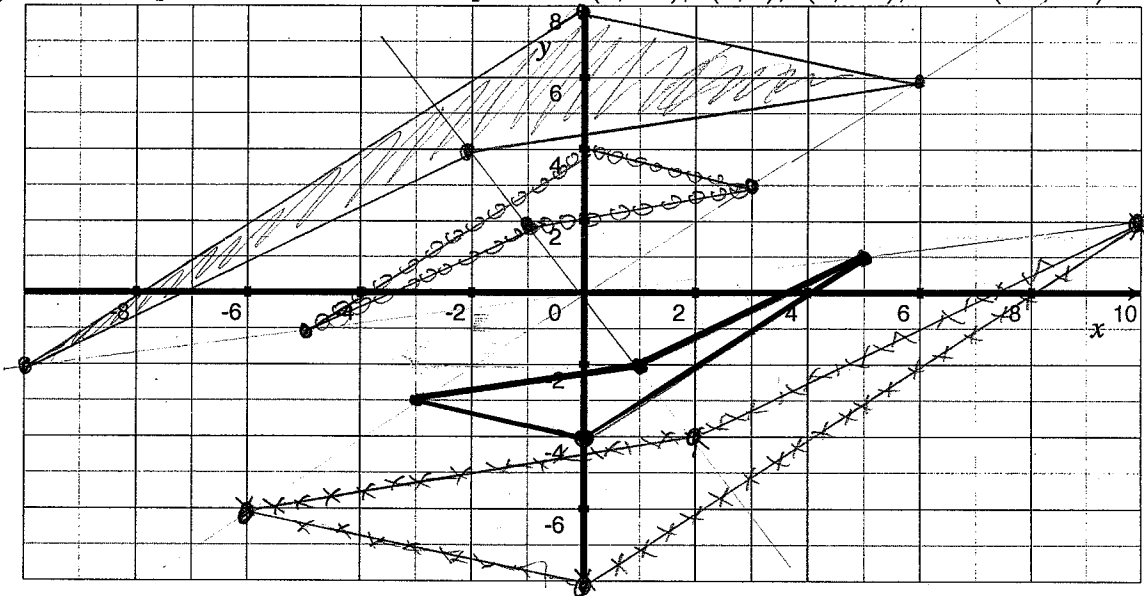
Form yourselves into groups of three to answer the following questions. Turn in one copy for each group with all the group member's names on it. This worksheet is due Friday 8/21 by 4:30 pm in my box.

1. Do question 5 under the check section of the sample school book page on page 848.

If Maria starts with the orange flag & rotates counter-clockwise  $90^\circ$ , she is right.  
 If Paul starts with the red flag & rotates counter-clockwise  $270^\circ$ , he is right.  
 The lack of a specified starting location & direction means both could be right.

2. Two geometric shapes are *similar* if it is possible to transform one onto the other by a sequence of isometries followed by a size transformation.

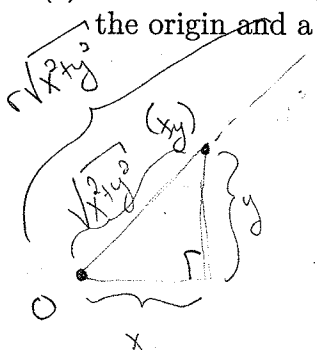
- (a) Draw a quadrilateral with the points:  $(1, -2)$ ,  $(5, 1)$ ,  $(0, -4)$ , and  $(-3, -3)$ .



- (b) Draw the image of the quadrilateral under the following size transformations with the center at the origin and a scale factor of:

- i. 1    the same quadrilateral as the original results
- ii. 2    x x x x
- iii. -1    o o o o
- iv. -2    shaded

- (c) What is the image of the points  $(x, y)$  under a size transformation with center at the origin and a scale factor of  $r$ .



$(x, y) \rightarrow (rx, ry)$   
 To see this consider the right triangle shown to the left. A size transformation with center  $(0, 0)$  & scale factor  $r$  acts on the triangle & scales both  $x$  &  $y$  by the factor  $r$ .