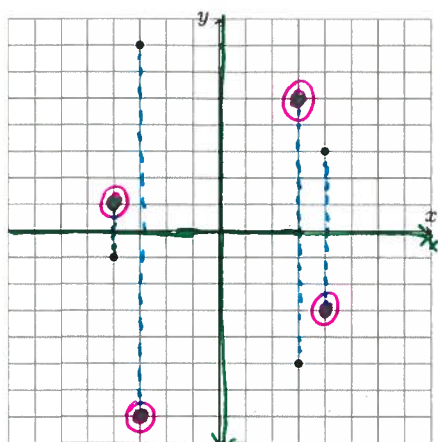
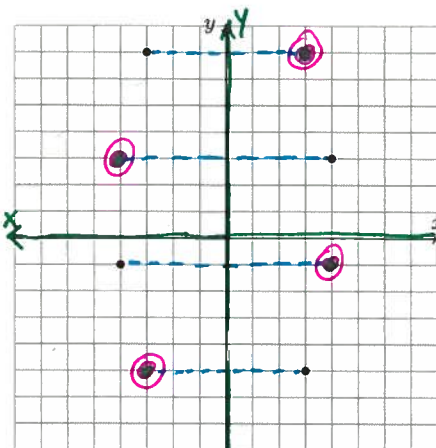


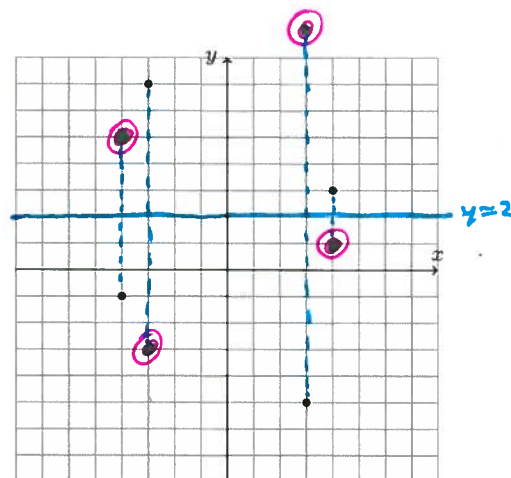
MATH 1136 TRANSFORMATION EXAMPLES



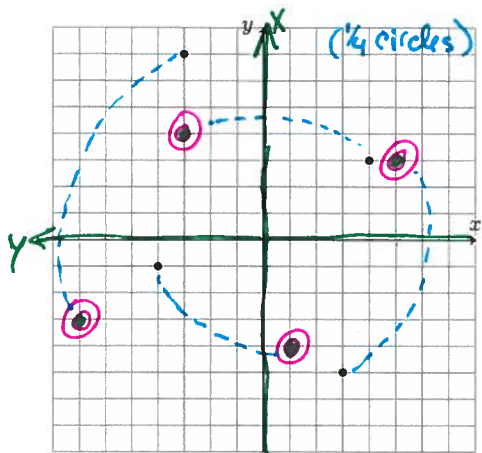
reflect across x -axis
 $(a, b) \mapsto (a, -b)$



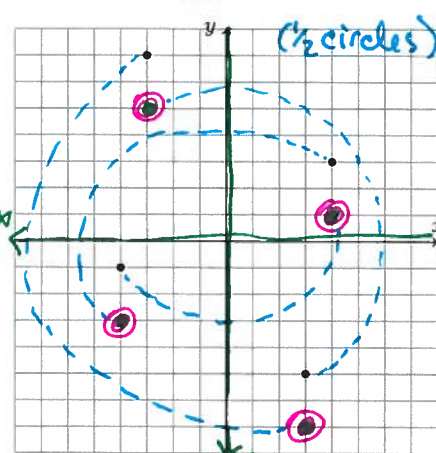
reflect across y -axis
 $(a, b) \mapsto (-a, b)$



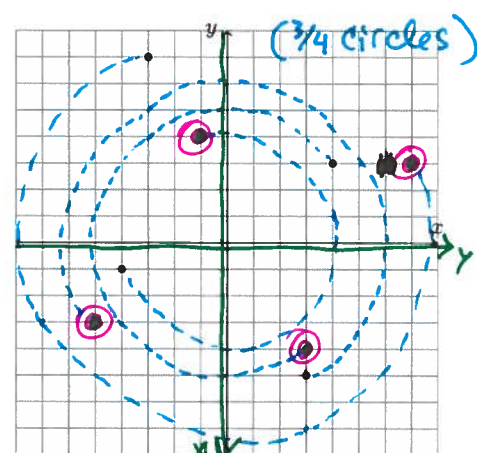
reflect across line $y = 2$
 $(a, b) \mapsto (a, -(b-2)+2) = (a, -b+4)$



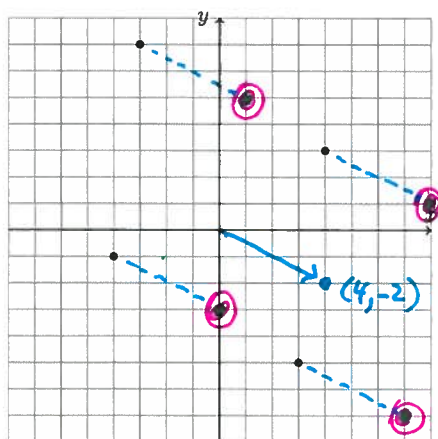
rotate 90° around the origin
 (counter-clockwise) $(a, b) \mapsto (-b, a)$



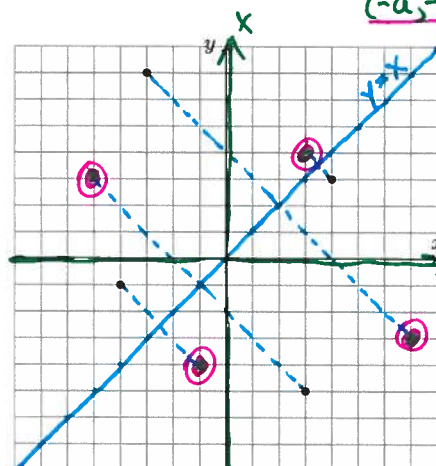
rotate 180° around the origin
 (counter-clockwise) $(a, b) \mapsto (-a, -b)$



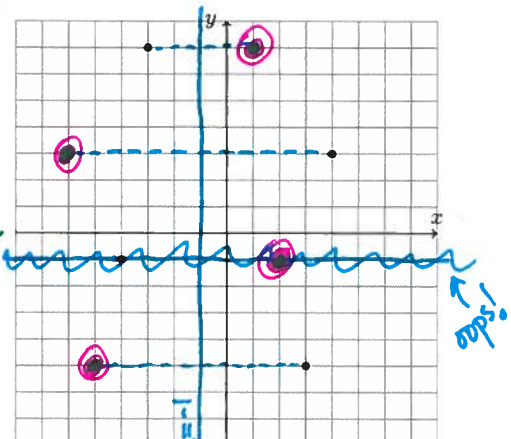
rotate 270° around the origin
 (counter-clockwise) $(a, b) \mapsto (b, -a)$
 (same as 90° clockwise)



translate by $(4, -2)$
 $(a, b) \mapsto (a+4, b-2)$



reflect across the line $y = x$
 $(a, b) \mapsto (b, a)$



reflect across the line $x = -1$
 $(a, b) \mapsto (-(a+1), b) = (-a-1, b)$

Date: 2017-04-19.