

Practice Exam

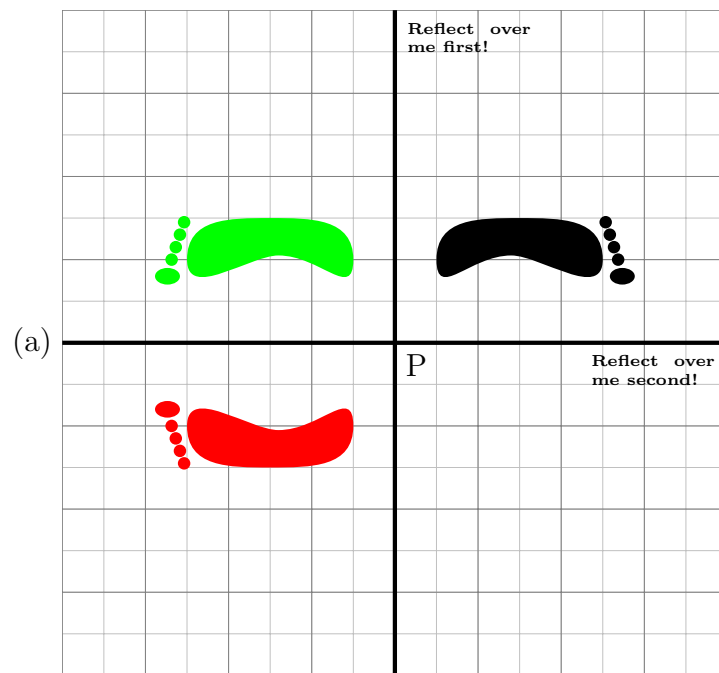
Name: _____

MA111-003
2012-04-02

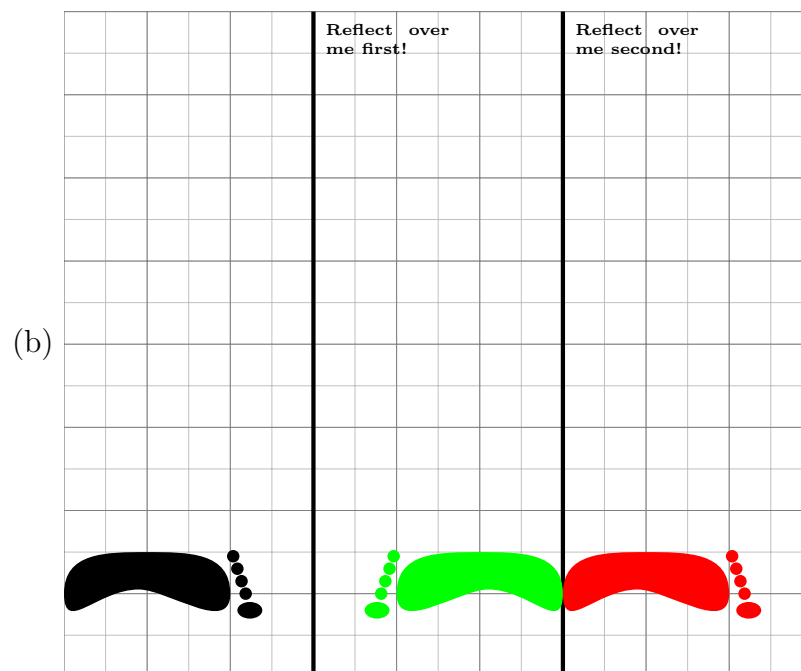
Part I: Applying Rigid Motions (reflections)

- (1) Apply the first rigid motion to the printed foot, resulting in an intermediate foot.
- (2) Apply the second rigid motion to your intermediate foot, resulting in a final foot.
- (3) Describe a single rigid motion that takes the printed foot to the final foot.

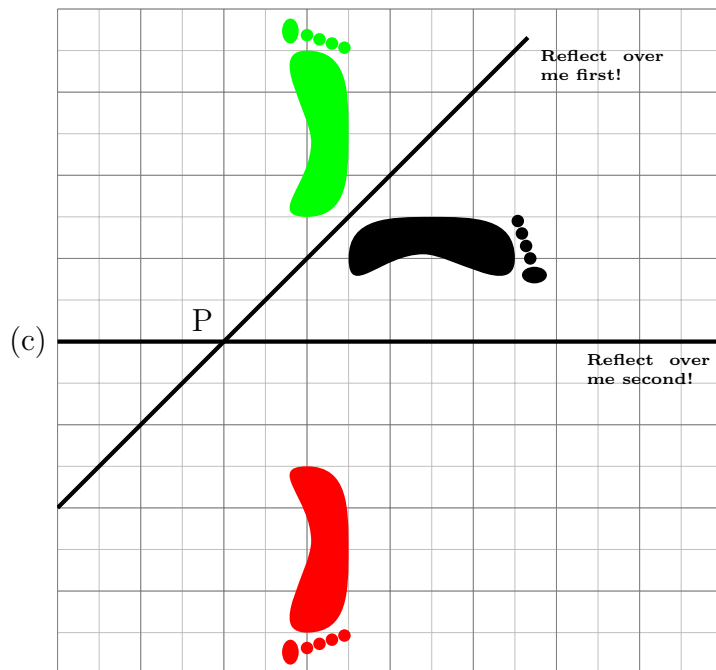
(1) and (2) are graded on location, angle, and left-vs-right. (3) is graded on the type (verb) and parameters (adverb) like “rotation about P of 37 degree clockwise”



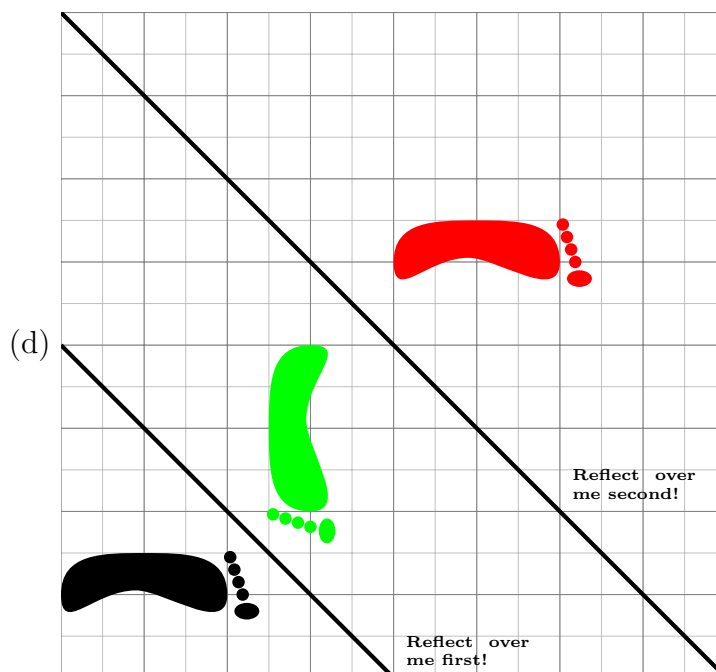
Single motion:
Rotate clockwise 180° ($1/2$ circle) around P (twice the angle of intersection around the point of intersection)



Single motion:
Translate to the right by 6 big squares (twice the distance between the lines in the direction perpendicular to the lines)



Single motion: **Rotate clockwise 90° ($1/4$ circle) around P** (twice the angle of intersection around the point of intersection)

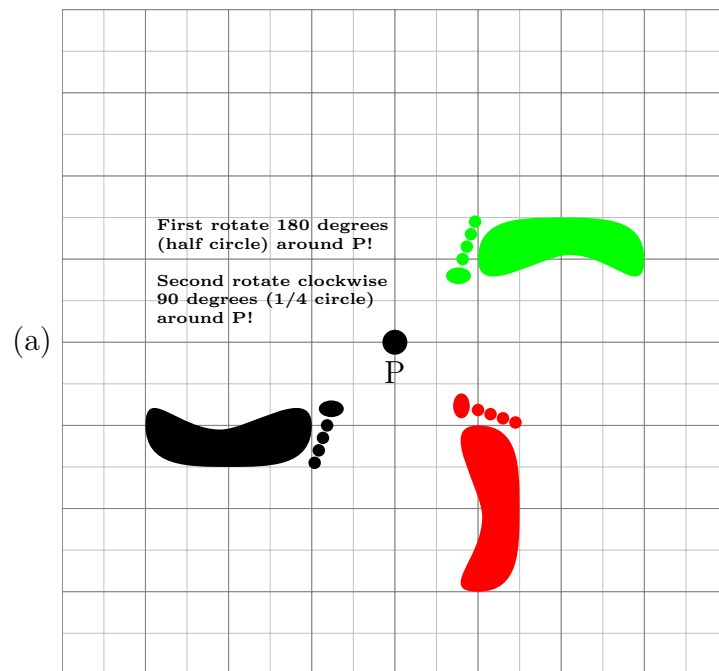


Single motion: **Translate up and right by 4 big squares** (twice the distance between the lines in a direction perpendicular to the lines)

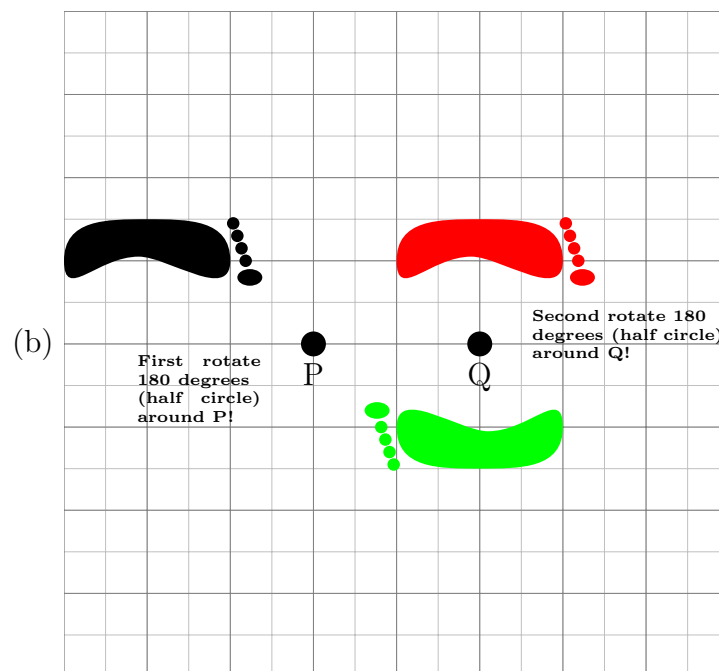
Part II: Applying Rigid Motions (rotations)

- (1) Apply the first rigid motion to the printed foot, resulting in an intermediate foot.
- (2) Apply the second rigid motion to your intermediate foot, resulting in a final foot.
- (3) Describe a single rigid motion that takes the printed foot to the final foot.

(1) and (2) are graded on location, angle, and left-vs-right. (3) is graded on the type (verb) and parameters (adverb) like “rotation about P of 37 degree clockwise”

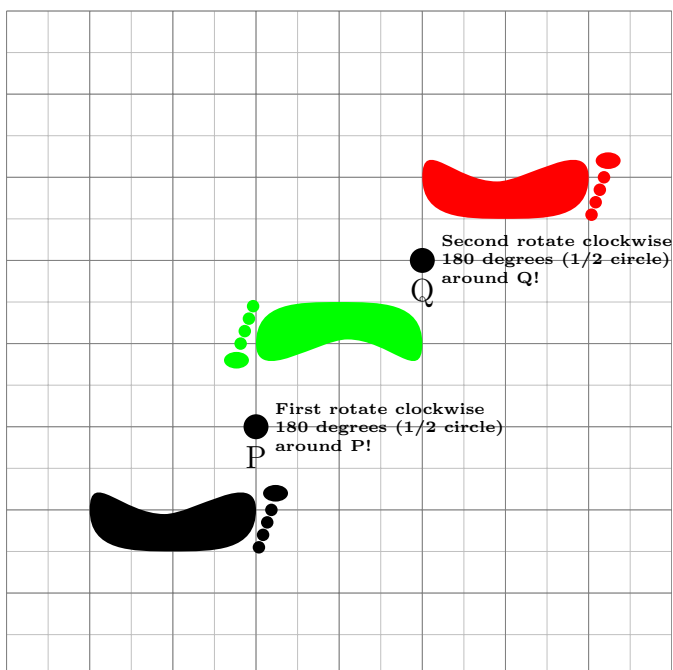


Single motion: Rotate clockwise 270° ($3/4$ circle) around the common center of rotation (just add the angles of rotation and keep the common center)



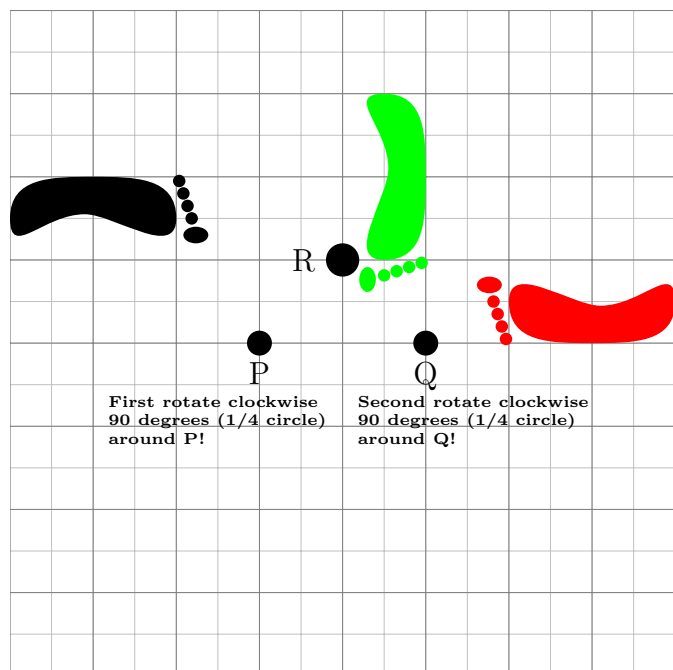
Single motion: Translate right by 4 big squares (twice the distance between the centers, in the direction between the centers). Two spins makes a hop.

(c)



Single motion: Translate up and right by 4 big squares (twice the distance between the centers, in the direction between the centers). Two spins makes a hop.

(d)



Single motion: 180 degree rotation around R. This is found by decomposing the rotations into two reflections each, sharing a horizontal reflection that cancels.