

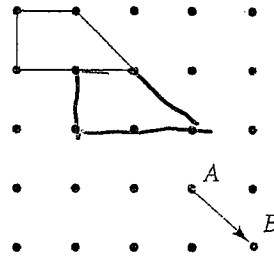
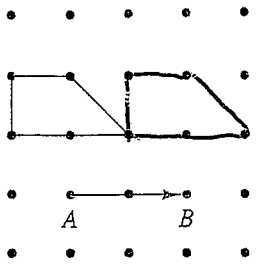
106 pts

MATH 313
EXAM 6

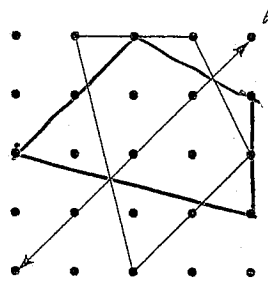
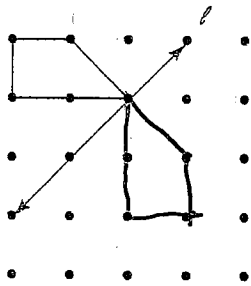
Name Key

Read each question carefully and follow all directions. Point values are indicated. Relax, breathe and good luck ☺

1. (8 points) For each of the following, find its image under the translation that takes A to B.

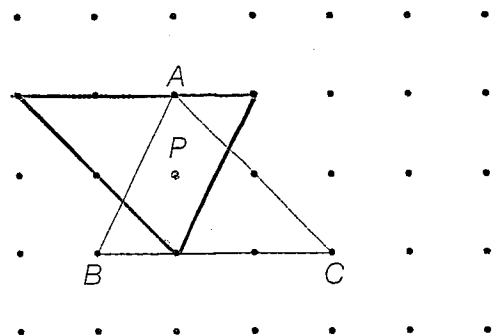
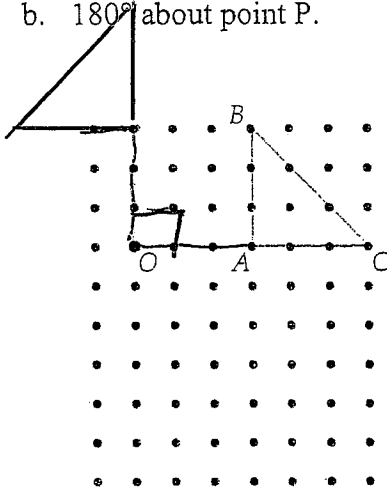


2. (8 points) Sketch the image of each quadrilateral reflected across line l .

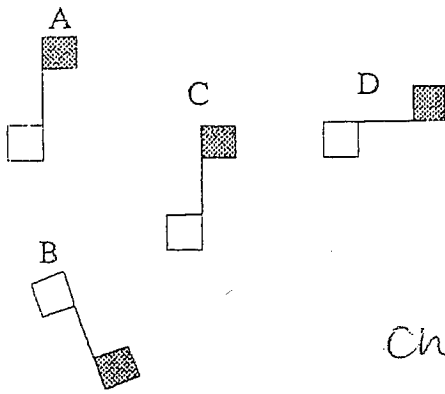


3. (8 points) For each of the following, find the image of triangle ABC under the given rotations.

- a. 90° counterclockwise about point O.
b. 180° about point P.



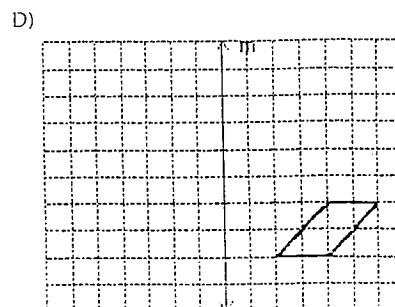
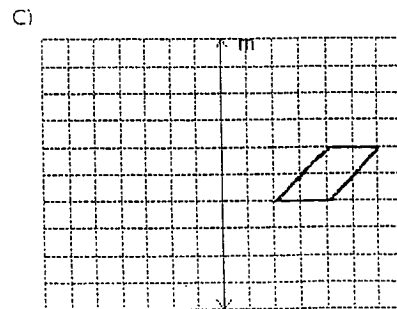
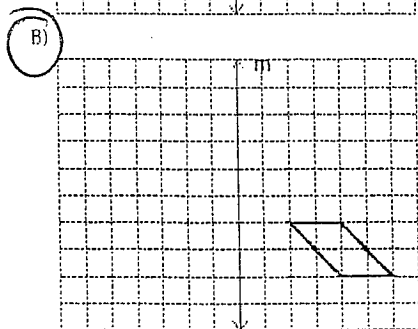
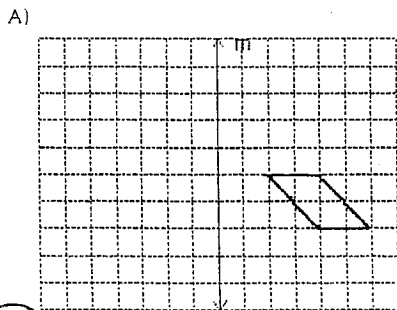
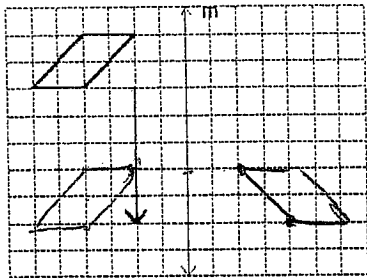
4. (8 points) For each of the figures below, state which single type of rigid motion: *translation*, *rotation* (about a point), or *reflection* (across a line) or *glide-reflection* would accomplish each transformation.



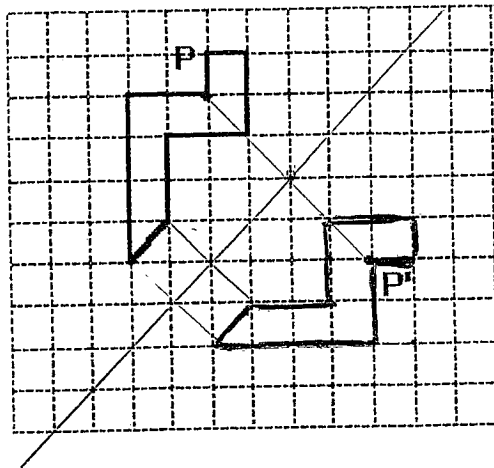
A → B reflection
 A → C translation
 A → D glide-reflection
 B → C glide-reflection

change D → B

5. (3 points) Find the image of the given figure under a glide reflection given the translation arrow and line of reflection m .

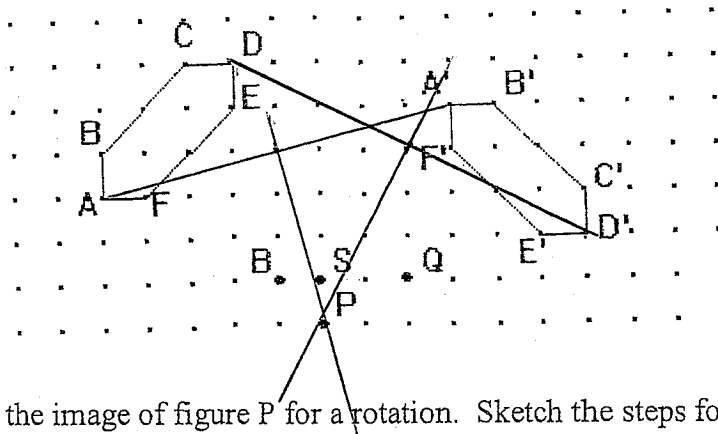


6. (5 points) Find the image of the given figure under reflection that sends P to P'. Also draw in the line of reflection symmetry.



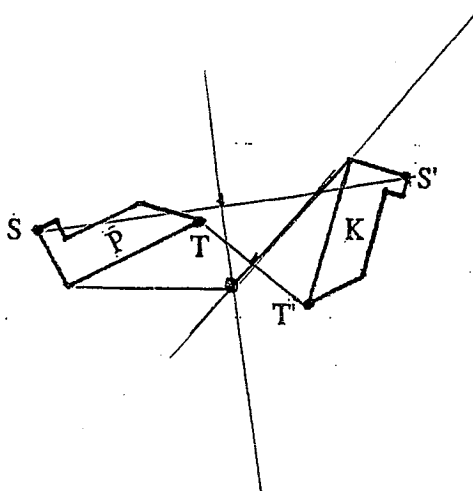
7. (3 points) A figure and its image under a rotation are given. Which point shown is the center of rotation?

- a. S
- b. P
- c. B
- d. Q

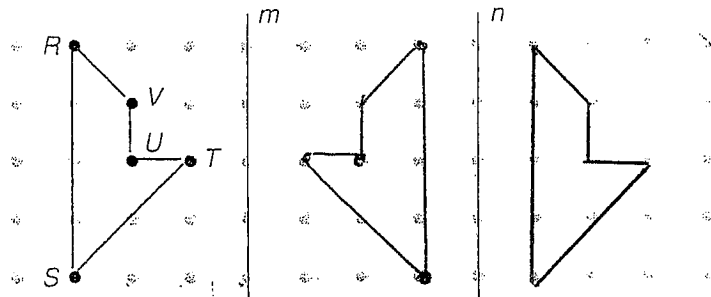


8. (8 points) Figure K is the image of figure P for a rotation. Sketch the steps for finding the center of rotation and mark the location of this center. Also find the angle and direction of rotation.

The angle is 130° degrees in the clockwise direction.

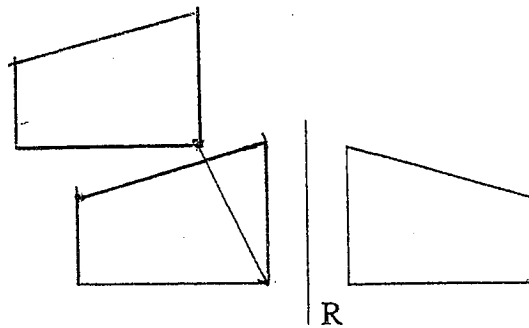


9. (8 points) m and n are parallel lines. Reflect the figure first across m and then across n . Then describe a single transformation that would give the same result.

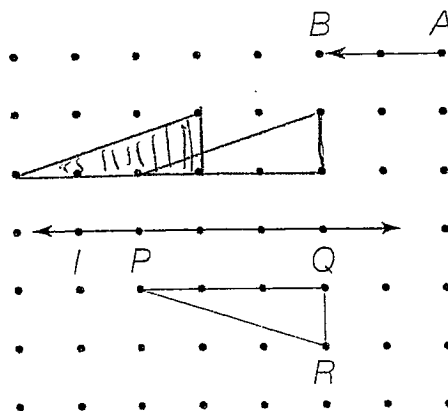


translation

10. (8 points) This figure is the image under translation using the vector AB and reflection across line l . Show each step in the composition of transformations and find the original figure

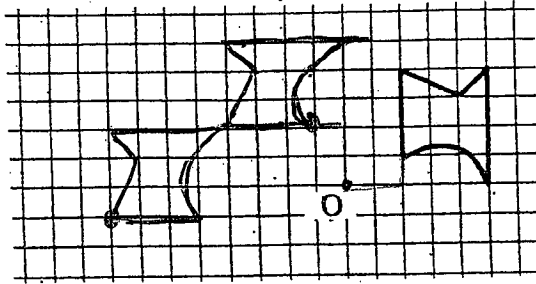


11. (8 points) Find the image of the given figure under the glide reflection using the given vector and line of reflection m .



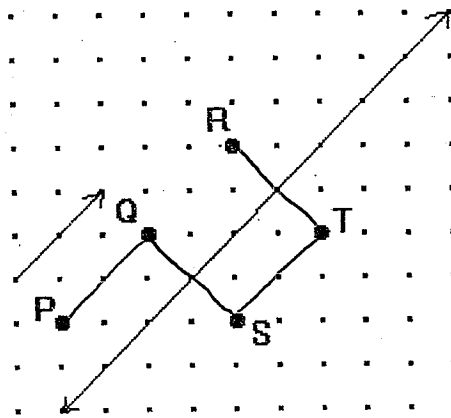
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12. (10 points) Find the image of the figure under a 90° counterclockwise rotation about point O, followed by a translation left of 4 units and down 3 units.

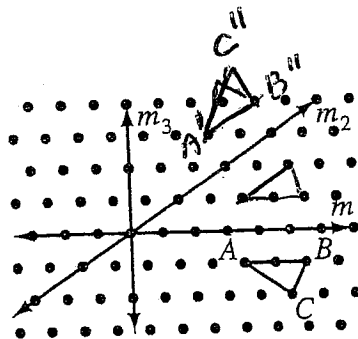


13. (3 points) The transformation vector and line of reflection are given. Find the point of the grid that is the image P'' of the point P under two successive glide reflections.

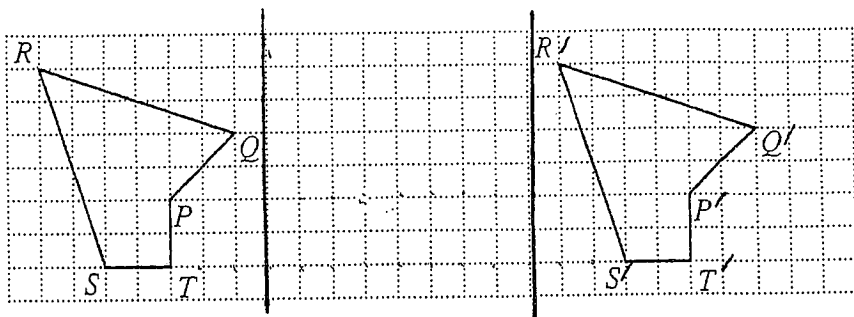
- a. Q
- b. R
- c. S
- d. T



14. (10 points) Find the image of triangle ABC under reflection across line m_1 followed by reflection across line m_2 .



15. (4 points) Draw in two lines of reflection symmetry, label them "m" and "n", so that their composition will give the same image as the original translation of polygon PQRST.



figures are 16 units apart
lines of reflection - 8 units apart

16. (4 points) What single type of rigid motion would describe the composition of rigid motions (using orientation as a guide).

- a. The composition of 4 different parallel lines of reflection symmetry: translation
- b. The composition of a translation followed by a rotation: rotation or translation

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