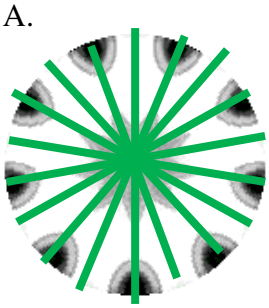
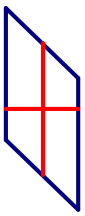
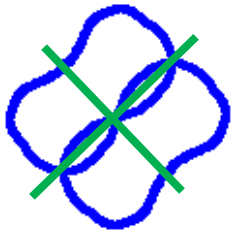
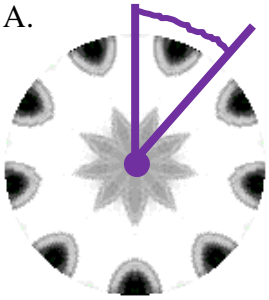
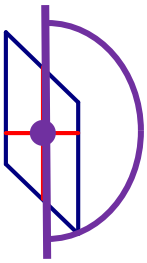
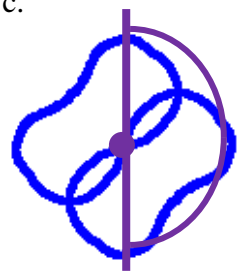
Math 246 Geometry practice problems:

1. Symmetry lines:

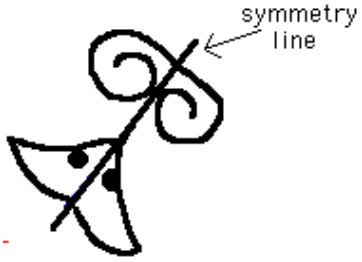
A.	B.	c.
	 No reflection lines	

Rotation angles:

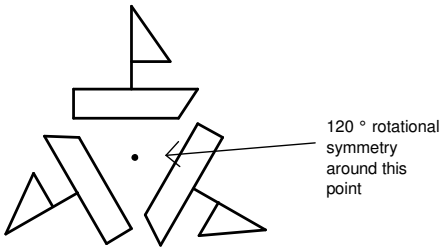
A.	B.	c.
 360° ÷ 9 = 40° rotation Order 9 rotation	 180° Order 2 rotation	 180° Order 2 rotation

3. Complete the pattern so that it has reflection or rotational symmetry as specified:

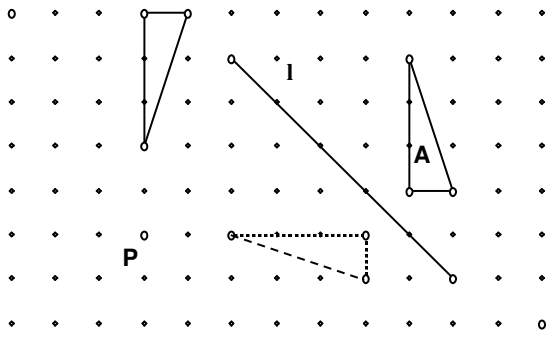
A.



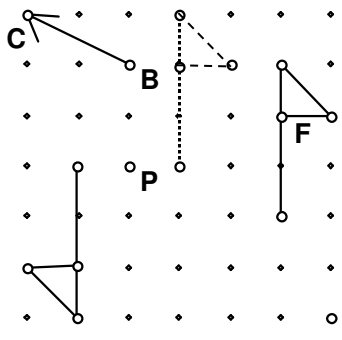
B.



4.

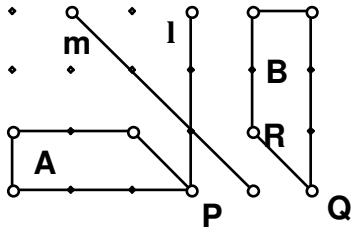


5.



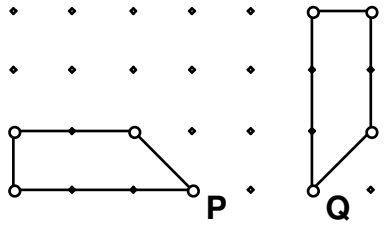
5. Tell how to get from trapezoid A to trapezoid B using 3 or fewer transformations:

A.



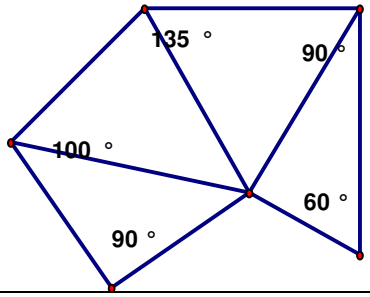
Option 1: reflect in line m, and translate on the vector from R to Q.
Option 2: reflect in line l, rotate 90° counter clockwise around P, translate on the vector from P to Q
other correct answers are possible

B.

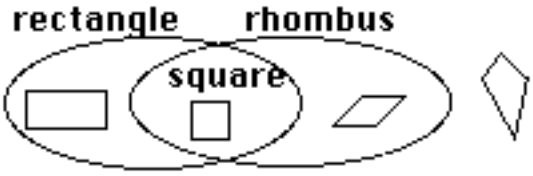


Option 1: rotate -90° around P, and then translate on the vector from P to Q
Option 2: translate on the vector from P to Q and then rotate 90° clockwise around Q.

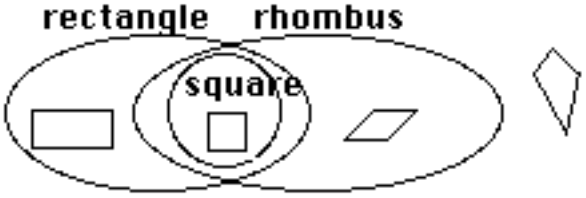
6. The polygon is a hexagon, which can be divided into 4 triangles, so the angle sum is 4x180=720, thus the missing angle is 720-90-100-135-90-60=245°



9. Draw a Venn diagram showing the relationship between a rectangles, rhombuses, and squares. Draw a picture of something that belongs in each non-empty region.

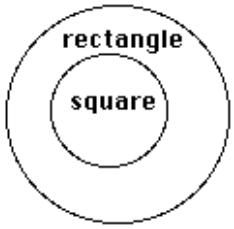


OR

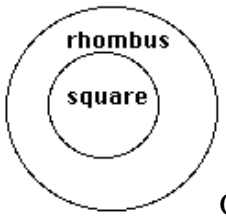


10. A. Circle the types of quadrilateral on the list whose diagonals bisect each other:
square; rectangle; parallelogram; rhombus; kite; trapezoid

11. Choose two of the types that you have chosen in the list above that have a set-subset relationship, and label them on the Venn Diagram below:



OR



OR a pair where parallelogram is the larger set, and any of the others is the subset.

12. A is chosen to show that trapezoids can't have two parallel lines. B is chosen to show that trapezoids have to be closed (with no gaps).