8-3 Worksheet Rotations of figure through a point that is not the origin*

Directions: Rotate each figure about point C, by the indicated degree measures. Make sure to list the first transformations as prime and second transformation as double prime.

1. Figure B(2,-1), A(5,-3), D(1,-4) rotated 90° and 270° counter clockwise around the point C(1,1).



2. Figure S(1,4), Q(3,2), U(6,5), A(4,7) rotated 180° and 270° counter clockwise around the point C(0,1).



3. Figure D(2,6), E(5,6), F(5,2) rotated 90° and 270° counter clockwise around the point C(3,1).



4. Figure T(-3,-1), R(-1,-1), A(1,-4), P(-5,-4) rotated 90° and 180° counter clockwise around the point C(-2,1).



Worksheet 8-4 Symmetry

Tell what type(s) of symmetry each figure has. If it has line symmetry, sketch the line(s) of symmetry. If it has rotational symmetry, tell the angle of rotation.



11. regular hexagon

12. regular octagon

13. Make a Conjecture What is the relationship between the number of sides of a regular polygon and the number of lines of symmetry?

14. How many lines of symmetry are found in a regular polygon with 40 sides?

Tell whether each three-dimensional object has *reflectional symmetry in a plane, rotational symmetry about a line,* or *both.*

| 15. a light bulb | 16. a pair of pants |
|--------------------------------|----------------------------|
| 17. a rectangular table | 18. a round table |
| 19. a sand dollar | 20. butterfly |