

Geometry

Notes

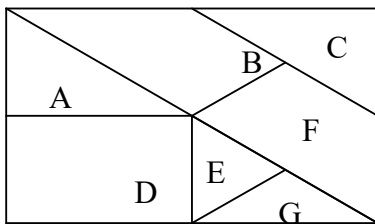
- **Properties of Quadrilateral**

- **Rotational Symmetry vs. Lines of Symmetry**

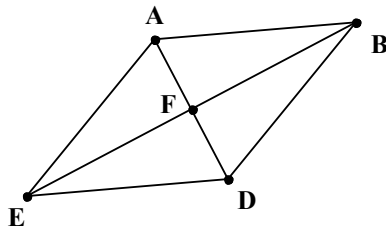
The concept of rotational symmetry and lines of symmetry are related but **not** equivalent.

Discussion Questions

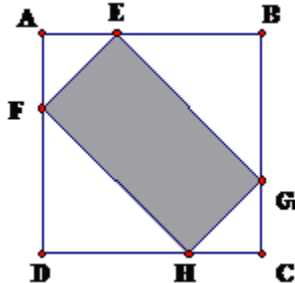
1. How many faces are there on a pyramid whose base has 12 sides?
2. Six children were evenly spaced around a circle. The circumference of the circle was 30 meters. How far apart are the children who are directly opposite each other? (Round to the nearest tenth of a meter.)
3. The rectangle shown below is made of various other polygons. Figure D is a rectangle. Figure E is an equilateral triangle. Figure G is an isosceles triangle. The segment that runs from the upper left corner to the bottom right corner of the outer rectangle is a diagonal of that rectangle. What is the measure of the greatest acute angle in Figure A?



4. Quadrilateral ABDE is a rhombus. The length of AD is 23 and the length of BE is 43. What is the area of ABDE?



5. The points E and F are located one third of the way from A toward B and D respectively. The points G and H are located one third of the way from C toward B and D respectively. If the length of the side of the square shown below is s , what is the area of the shaded rectangular region in terms of s ?



6. Find the order and angle of rotational symmetry, and the number of lines of symmetry of:

a) the letter Z.

b)



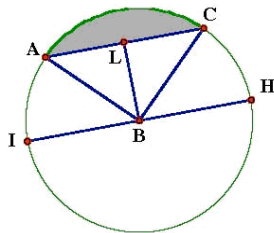
c)



Practice Questions

7. Lee looked at the clock. The minute hand was pointing at the 6 and the hour hand was pointing halfway between 2 and 3. Then the minute hand rotated 240° (clockwise). At that time, what is the lesser angle between the hour hand and the minute hand?

8. The center of the circle below is point B and IH, a diameter of the circle, is 4 units in length. \overline{BL} is perpendicular to \overline{AC} . Angles IBA, ABL, LBC and CBH each measure 45 degrees. Find the area of the shaded region.



9. The figure below is a square that has been subdivided into twelve congruent rectangles. The perimeter of each rectangle is 48 units. What is the area of the square?

