1. What shape is a sewer cover and why?

2. Do you think that there are other shapes that have constant width?

3. Which shapes shown in the demonstration have constant width?

4. Figure E is called a Reuleaux Triangle. Follow the directions to construct a Reuleaux Triangle.
   - Use equilateral triangle ABC with side length h.
   - Use A as the center, construct arc BC
   - Use B as the center, construct arc AC
   - Use C as the center, construct arc BA

   a. What is the distance from A to any point on arc BC?
   b. What is the distance from B to any point on arc AC?
   c. What is the distance from C to any point on arc BA?
   d. What is the constant width of the Reuleaux Triangle?
   e. Find the perimeter of the Reuleaux Triangle in terms of h.
   f. Find the area of the Reuleaux Triangle in terms of h.
5. ABCDE below is a regular pentagon. Construct the diagonals. Let AD=h. What is true about the lengths of all the diagonals?

Follow the directions to construct a Reuleaux Pentagon.
- Use A as the center, construct arc DC
- Use B as the center, construct arc DE
- Use C as the center, construct arc EA
- Use D as the center, construct arc AB
- Use E as the center, construct arc BC

6. Find the perimeter of the Reuleaux Pentagon in terms of h.

7. For both the Reuleaux Triangle and Pentagon find the ratio of the perimeter to the diameter (diameter=constant width).

8. Can you construct a Reuleaux square or hexagon? Try on the shapes below

a. What are the restrictions on the number of sides that a generating polygon can have?