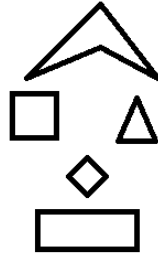Chapel Hill Math Circle

Polygons
January 14, 2017

1. How many triangles, squares, rectangles, quadrilaterals, and polygons are in the picture below?

Triangles: _____
Squares: _____
Rectangles: _____
Quadrilaterals: _____
Polygons: _____

2. Does it help to have definitions for the objects above before we count them? Try to explain what they are.

   a. A **polygon** is a _____
   _____

   b. A **triangle** is a _____
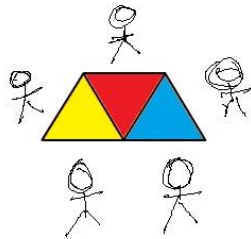   _____

   c. A **quadrilateral** is a _____
   _____

   d. A **rectangle** is a _____
   _____

   e. A **square** is a _____
   _____

3. All the tabletops at a restaurant are equilateral triangles. Only one person can sit on each side of a table.

   a. How many people can sit at one table?

   b. If three tables are joined, as shown below, then five people can sit. How many tables are needed to sit 27 people if we continue to add tables next to the rightmost table?

   c. How many people will 21 tables in a row accommodate?

   d. Suppose you can only make rows of no more than 10 tables. How many tables are needed to sit 50 people?