

Week 3 Lecture 1

September 11, 2017

- Stretch 8: How many flags could you plant on the surface of the earth (including oceans) so that the distance between any two flags is the same?

- **Hints:**

- * Try drawing.

- **Solution:** 2 at the poles or 4 if you place a flag at each point that an inscribed tetrahedron (4 vertices) intersects the surface of the sphere.

- Chapter 4: See It

- **Pictures, Tables, Charts and Graphs**

- * Many problems require you to keep track of information with a table or chart. Another option is to draw a picture or graph to try and see a connection.

- * **Green's Party (Pg. 29)**

- **Hints:** Try to notice a pattern in the table.

- **Solution:** The second column is odd numbers $(2n - 1)$ and the third column is squares (n^2) . So when $n = 15$ the size of the entering group is $(2 \cdot 15 - 1) = 29$ and the total number of guests is $15^2 = 225$.

- How about at ring 100?

- **Models**

- * Creating a physical model can provide a perspective to a problem that is not apparent in a picture.

- * **Tethered Goat (Pg. 35)**

- Make a model

- Calculate each area individually and add them all up:

$$(.25)^2\pi(10)^2 + (.25)\pi(20)^2 + (.75)\pi(50)^2 = 25\pi + 100\pi + 1875\pi = 2000\pi.$$