Problems of the Week
Due March 12

If you don't know where to start a problem, try one of these strategies:

- Guess and check
- Solve a simpler problem
- Make an organized list
- Experiment
- Draw a picture or diagram
- Act it out
- Look for a pattern
- Work backwards
- Make a table
- Use deduction
- Use a variable
- Change your point of view

1. In how many zeros does \(\frac{60!}{(4 \cdot 5!)}\) end?

2. Find the sum of first 34 terms in the following of the sequence 1, 5, 6, 11, 17, 28, 45, 73, ... if the 34-th term is 19,801,199 and the 35-th term is 32,039,013.

3. The residents of Nogginbumpin greet each other by bumping heads. At a gathering, a total of 171 bumps were exchanged. If each person bumped heads exactly once with every person there, how many residents attended?

4. Daniel and Celine are part of a group having 8 students. There are 8 chairs on a stage arranged in a straight line. This group of students must sit on these 8 chairs. Daniel cannot sit near Celine. How many seating arrangements are possible?

5. Given a 3x11 rectangular array of dots, how many triangles can be formed whose vertices are dots in the array?