

Problem 1.3 – Custom Construction Parts

Extending Patterns

- A) 1. Complete the table below to show the number of rods in beams of different lengths.

Hint: drawing a sketch of the beams may help.

Beam Length (ft)	1	2	3	4	5	6	7	8
Number of Rods	3	7					27	

2. Describe the pattern of change in the number of rods as the beam length increases.
3. Make a prediction as to how this graph might look. Draw a quick sketch.
4. How many steel rods are there in a beam with a length of **50 feet**? *Explain* the strategy you used to arrive at your answer.

B) 1. Complete the table below to show the number of rods in staircase frames with different number of steps.

Hint: drawing a sketch of the staircase frames may help.

Number of Steps	1	2	3	4	5	6	7	8
Number of Rods	4	10	18					

2. Describe the pattern of change in the number of rods as the number of steps increases.

3. Make a prediction as to how this graph might look. Draw a quick sketch.

4. How many steel rods are there in a staircase frame with **12 steps**? *Explain* the strategy you used to arrive at your answer.

C) 1. What are some similarities between the data for question A and question B?

2. What are some differences?