

Investigation 1.3 Extending Patterns

Part A

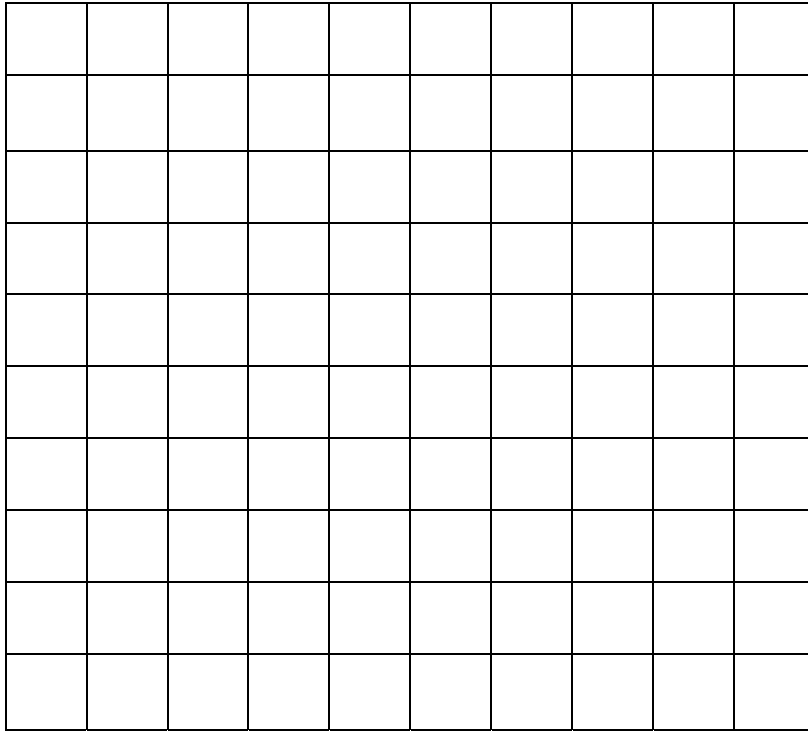
1. Complete the table below to show the number of rods in beams of different lengths.

Hint: Make drawings of the beams.

CSP Beams

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

2. Make a graph of the data in your table.



3. As the beam increases, the number of rods changes by _____.

4. You can see this pattern in the table by _____.

You can see this pattern in the graph because _____.

5. A beam of length 50 feet would have _____ steel rods. Explain.

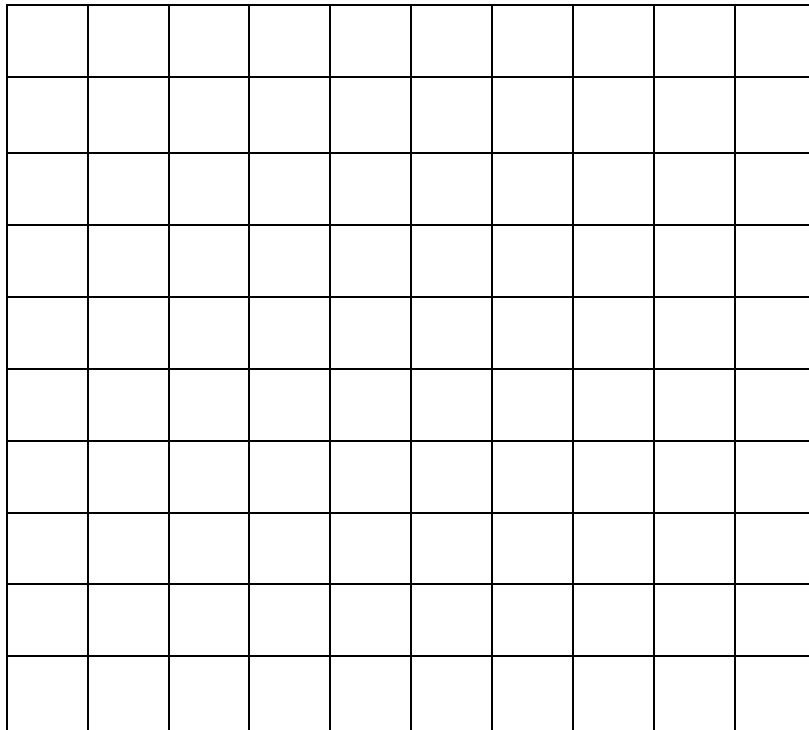
Part B

1. Complete the table below to show the number of rods in staircase frames with different numbers of steps. **Hint:** Make drawings of staircase frames.

CSP Beams

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

2. Make a graph of the data in your table.



3. As the number of steps increase, the number of rods change by _____

4. You can see this pattern in the table by _____
You can see this pattern in the graph because _____
5. A staircase with 12 steps would have _____ steel rods.

Part C

How is the pattern in “A” similar to the pattern in B?

- _____
- _____

How is the pattern in “A” different to the pattern in B?

- _____
- _____

Part D

The beam and bridge thickness relationships are both _____

The bridge-length and staircase relationships are both _____
