

The Handshake Problem

- How many handshakes are possible with 3 people? With 5?
- Find a general rule for the number of handshakes for n people. Find a way to verify your rule.

Extension:

- a. Suppose a king and queen were present, and by protocol, they could only shake hands with each other. Give a general rule for the number of handshakes in this case. What will the graph of this rule look like? How does it compare to the graph of the rule above?

- b. Suppose there were four people in the royal party who could shake hands only with each other. If there were 111 handshakes in the room, how many people were there? How does the graph of the general rule in above change?