

Handshake Problem #2: Assume there are 10 people in the room, including you. Each person in the room must shake hands one time, and only one time, with all the other people in the room. How many handshakes will occur?

A. Use the problem solving process to solve Handshake Problem #2.

1. Understand the problem:

- a. What data or information do you know?

- b. What is not known?

- c. What are the conditions?

- d. What do you have to find?

2. Plan the solution:

- a. How many people are needed for a single handshake?

- b. How would you draw a picture or a diagram that shows all the possible handshakes between 4 people? How would you do this using a table? Any other way?

How many handshakes did you get? _____

- c. Suppose a fifth person comes along to this group of four. How many additional handshakes will there be?

of additional handshakes _____

Total # of handshakes _____

- d. Will there always be $(n-1)$ new handshakes if an n th person joins a group of $(n-1)$ people? Why?

3. Carry out the plan:

How many handshakes will occur with 10 people in the room?

of handshakes _____

4. Review and discuss your solution:

- b. Reflect on your solution

B. Extend the problem to 20 people in the room. How many handshakes will occur?