

## Balls and Boxes

**Problem 1.** How many ways are there to put 2 identical balls in 2 different boxes?

**Problem 2.** How many ways are there to put 3 identical balls in 2 different boxes?

**Problem 3.** How many ways are there to put 4 identical balls in 2 different boxes? What is the pattern for more balls?

**Problem 4.** How many ways are there to put 2 identical balls in 3 different boxes?

**Problem 5.** How many ways are there to put 3 identical balls in 3 different boxes?

**Problem 6.** How many ways are there to put 4 identical balls in 3 different boxes?

**Problem 7.** How many ways are there to put 5 identical balls in 3 different boxes? What is the pattern for more balls?

**Problem 8.** How many ways are there to put 2 identical balls in 4 different boxes?

**Problem 9.** How many ways are there to put 3 identical balls in 4 different boxes?

**Problem 10.** How many ways are there to put 4 identical balls in 4 different boxes?

**Problem 11.** How many ways are there to put 5 identical balls in 4 different boxes? What is the pattern for more balls?