

# Ordering 4-digit numbers

## Task

- a. Arrange these numbers in increasing order, beginning with the least.

2400 4002 2040 420 2004

- b. Arrange these numbers in decreasing order, beginning with the greatest.

1470 847 710 1047 147

## Commentary

It is common for students to compare multi-digit numbers just by comparing the first digit, then the second digit, and so on. This task includes three-digit numbers with large hundreds digits and four-digit numbers with small thousands digits so that students must infer the presence of a 0 in the thousands place in order to compare. It also includes numbers with strategically placed zeros and an unusual request to order them from greatest to least in addition to the more traditional least to greatest.

## Solution

- a. 420 2004 2040 2400 4002

We know that 420 is less than any four-digit number. Of the numbers 2004, 2040, and 2400, 2004 is the least, and 2400 is the greatest, since four ones are less than four tens, and four tens are less than four hundreds. 4002 is the greatest number since it contains four thousands, and the other three four-digit numbers contain less than three thousands.

- b. 1470 1047 847 710 147

We know that 1470 and 1047 are greater than the three three-digit numbers, since 1470 and 1047 are both greater than one thousand, and the three-digit numbers are less than one thousand. 1470 is greater than 1047 because 1470 contains one thousand and four hundreds, while 1047 contains one thousand and less than one hundred. We know that 847 is greater than 710 because 847 contains eight hundreds, and 710 contains less than eight hundreds. 710 is greater than 147 because 710 contains seven hundreds, and 147 contains less than two hundreds.

