

# 2.NBT Bundling and Unbundling

Alignments to Content Standards: 2.NBT.A.1

## Task

Make true equations. Write one number in every space. Draw a picture if it helps.

a. 1 hundred + 4 tens = \_\_\_\_\_

4 tens + 1 hundred = \_\_\_\_\_

b. 14 tens = 10 tens + \_\_\_\_\_ tens

14 tens = \_\_\_\_\_ hundred + 4 tens

14 tens = \_\_\_\_\_ ones

c. 7 ones + 5 hundreds = \_\_\_\_\_

d. 8 hundreds = \_\_\_\_\_

e. 106 = 1 hundred + \_\_\_\_\_ tens + \_\_\_\_\_ ones

106 = \_\_\_\_\_ tens + \_\_\_\_\_ ones

106 = \_\_\_\_\_ ones

f. 90 + 300 + 4 = \_\_\_\_\_

## IM Commentary

Students determine the number of hundreds, tens and ones that are necessary to write equations when some digits are provided. Student must, in some cases, decompose hundreds to tens and tens to ones. The order of the summands does not always correspond to the place value, making these problems less routine than they might seem at first glance.

See the solution for detailed information about the parts of this task.

[Edit this solution](#)

## Solution

a. 140, 140.

The first problem asks for the same number (140) in different ways. This emphasizes that order doesn't matter in addition – yet order is everything when using place-value notation.

b. 14 tens = 10 tens + 4 tens

14 tens = 1 hundred + 4 tens

14 tens = 140.

In this problem, the base-ten units in 140 are bundled in different ways. In the first line, “tens” are thought of as units: 14 things = 10 things + 4 things.

c. 507.

By scrambling the usual order, the third problem requires students to link the values of the parts with the order of the digits in the positional system. Also, to encode the quantity, the student will have to think: “no tens,” emphasizing the role of 0.

7 ones + 5 hundreds = 507

d. 800.

In the fourth problem, the zeros come with a silent “no tens and no ones”:

8 hundreds = 800

e.  $106 = 1 \text{ hundred} + 0 \text{ tens} + 6 \text{ ones}$

$106 = 10 \text{ tens} + 6 \text{ ones}$

$106 = 106 \text{ ones}$

In this problem, the base-ten units in 106 are bundled in different ways. This is helpful when learning how to subtract in a problem like  $106 - 34$  by thinking about 106 as 100 tens and 6 ones.

f. 394.

The sixth problem is meant to illustrate the notion that if the order is always given “correctly,” then all we do is teach students rote strategies without thinking about the size of the units or how to encode them in positional notation.

$90 + 300 + 4 = 394$



2.NBT Bundling and Unbundling

Typeset May 4, 2016 at 18:45:32. Licensed by Illustrative Mathematics under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License .