

4.NF Expanded Fractions and Decimals

Task

Complete the table.

$43\frac{65}{100}$	$40 + 3 + \frac{6}{10} + \frac{5}{100}$	$40 + 3 + 0.6 + 0.05$	43.65
$21\frac{90}{100}$			
$40\frac{76}{100}$			
$7\frac{82}{100}$			
$18\frac{3}{100}$			

IM Commentary

The purpose of this task is for students to show they understand the connection between fraction and decimal notation by writing the same numbers both ways. Comparing and contrasting the two solutions shown below shows why decimal notation can be confusing. The first solution shows the briefest way to represent each number, and the second solution makes all the zeros explicit.

Solutions

Solution: Supressing unnecessary zeros

$43\frac{65}{100}$	$40 + 3 + \frac{6}{10} + \frac{5}{100}$	$40 + 3 + 0.6 + 0.05$	43.65
$21\frac{90}{100}$	$20 + 1 + \frac{9}{10}$	$20 + 1 + 0.9$	21.9
$40\frac{76}{100}$	$40 + \frac{7}{10} + \frac{6}{100}$	$40 + 0.7 + 0.06$	40.76
$7\frac{82}{100}$	$7 + \frac{8}{10} + \frac{2}{100}$	$7 + 0.8 + 0.02$	7.82
$18\frac{3}{100}$	$10 + 8 + \frac{3}{100}$	$10 + 8 + 0.03$	18.03

Solution: Keeping all zeros

$43\frac{65}{100}$	$40 + 3 + \frac{6}{10} + \frac{5}{100}$	$40 + 3 + 0.6 + 0.05$	43.65
$21\frac{90}{100}$	$20 + 1 + \frac{9}{10} + \frac{0}{100}$	$20 + 1 + 0.9 + 0.00$	21.90
$40\frac{76}{100}$	$40 + 0 + \frac{7}{10} + \frac{6}{100}$	$40 + 0 + 0.7 + 0.06$	40.76
$7\frac{82}{100}$	$0 + 7 + \frac{8}{10} + \frac{2}{100}$	$0 + 7 + 0.8 + 0.02$	7.82
$18\frac{3}{100}$	$10 + 8 + \frac{0}{10} + \frac{3}{100}$	$10 + 8 + 0.0 + 0.03$	18.03



