# PERCENTAGES: Solutions

## puzzle #1

If a merchant in a market sold loaves of bread for 8 coins a loaf, how many loaves would she need to sell in a day in order to pay the tax of "one part per hundred"? Assume she has to pay with a whole number of coins.

## puzzle #2

It is not always obvious how to rewrite a fraction as a percentage. Which of the following fractions are easier to write as a percentage than the others?

$$\frac{1}{20} \quad \frac{3}{5} \quad \frac{2}{3} \quad \frac{8}{25} \quad \frac{2}{15} \quad \frac{4}{7} \quad \frac{1}{8}$$

### ANSWER TO PUZZLE 1:

The first multiple 8 that is a group of one-hundreds is 400. That amounts to selling 50 loaves of bread (50 x 8 = 400). After selling 50 loaves of bread the baker can then give 4 whole coins over for tax.

She can do this for each group of 50 loaves she sells.

### ANSWER TO PUZZLE 2:

The fractions 2/3 and 2/15 and 4/7 are hard to turn into percentages. The fraction 1/8 is tricky too!

We have

    1/20 = 5%
    3/5 = 60%;
    2/3 = 66 2/3 %
    8/25 = 32%
    2/15 = 13 1/3 %
    4/7 = 57 1/7 %
    1/8 = 12 1/2 %

This website might help if you are interested (https://gdaymath.com/lessons/fractions/4-2-egyptian-fractions/).

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The NMF Weekly is written by mathematician Dr. James Tanton as a resource for friends and fans of the 2021 National Math Festival.

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