Subtraction: Solutions

puzzle #1

a) What's 20 take away 10?

b) I have to read pages 10 through 20 of my novel for homework tonight. How many pages will I actually read?

c) I am 20th in line for lunch and I see that my friend is ahead of me and is 10th in line. How many people are between us?

ANSWERS TO PUZZLE 1:

a) It's 10.
b) I have to read 11 pages of text!
c) There are 9 people between us.

These little questions show that one always needs to pause and think about what makes sense for any particular problem!

puzzle #2

What am I doing in this picture to get the answer 129 yet again?

$$\begin{array}{r} 1\ 0\ 0\ 5 \\ -\ \ \ \ 8\ 7\ 6 \\ \hline \end{array} \quad = \quad \begin{array}{r} 1\,{}^{1}0\,{}^{1}0\,{}^{1}5 \\ -\ 1\ 9\ 8\ 6 \\ \hline 0\ 1\ 2\ 9 \end{array}$$

ANSWER TO PUZZLE 2:

I've added ten to the units place to make 5 become 15 and I turned the 7 to an 8 in what I am subtracting, which means I subtracting an extra ten to counter that.

Then I added ten to the tens place to make 0 become 10, and I countered that by making the 8 in what I am subtracting a 9.

Then I added ten to the hundreds place to make 0 become 10, and I countered that by making the empty space a 1 in what I am subtracting.

Now I see 15 - 6 = 9 and 10 - 8 = 2 and 10 - 9 = 1 and 1 - 1 = 0. The answer 129 appears.

About the Author: Dr. James Tanton

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

Learn more at globalmathproject.org/nmf-weekly & nationalmathfestival.org

The Young People's Project

MSRI
Mathematical Sciences Research Institute

national math festival

GLOBAL MATH PROJECT