

Quiz 3

Key

This is a two-stage quiz. During the first stage, you can use your knowledge & calculator. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to write one solution (with everyone's name on it!!!) to be turned in for the group. Groups must be 2 or 3 people.

Show your work as you would for a colleague. Partial credit requires reasonable support.

1. [1] Circle the operation in the expression that should be performed first (you do *not* need to find the value): $36 + 18 \times 40 + 15$

PEMDAS \Rightarrow multiplication before addition

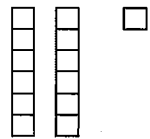
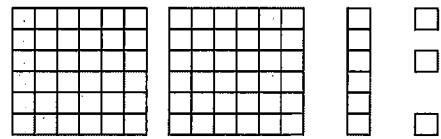
2. [2] Determine if the following statement is sometimes true, always true, or never true. Provide brief justification. For all whole numbers n , $0 \times n = 0$.

Always true.

We can think of multiplication with repeated addition model. So n plus itself zero times, so zero.

reasoning (1)

3. The base pieces for a subtraction problem are shown to the right. In words, the problem is to subtract the number with 2 longs and 1 unit base pieces from a number with 2 flats, 1 long, and 3 unit base pieces.



- (a) [2] Write the subtraction problem in positional notation for the given base.

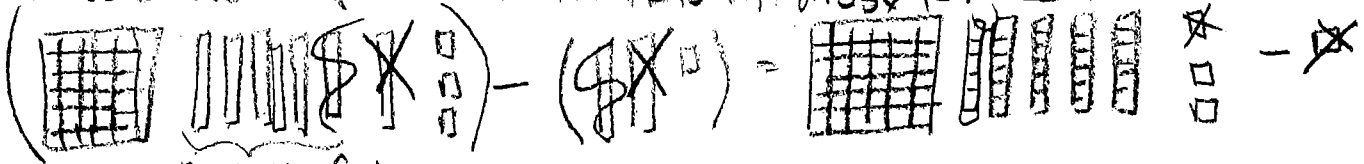
$$\begin{array}{r} 213_{\text{six}} \\ - 21_{\text{six}} \\ \hline \end{array}$$

- (b) [5] Perform the subtraction. Provide critical steps as you would for a 4th grader.

We can leave everything in base six.

Since we'd like to subtract 2 longs from the top number so

we break up one of the flats into 213 sixths to make the subtraction easier!



The broken flat

$$= 152_{\text{six}}$$

or 1 flat + 5 longs + 2 units

$$\Rightarrow 36 + 5 \times 6 + 2 = 68$$

Extra Practice #33

Start Multiplying #2

Quiz #2 #2 (+5) base 6

Why do we 31 = 80 and add/subtract #3

takeaway (15)

start (+5)

true/sense (1)

broke up flat (1)

got it (1)

relation (1)