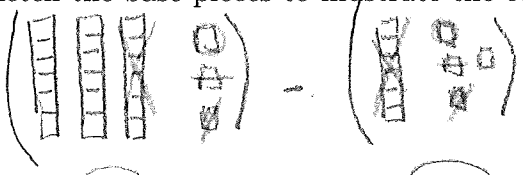
Quiz 3

Key

This is a two-stage quiz. During the first stage, use your knowledge & calculator to take this quiz. 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. Show your work as you would for a colleague. Partial credit requires reasonable support.

1. We consider the problem $33_{\text{six}} - 14_{\text{six}}$.

   1. [2] Sketch the base pieces to illustrate the computation.

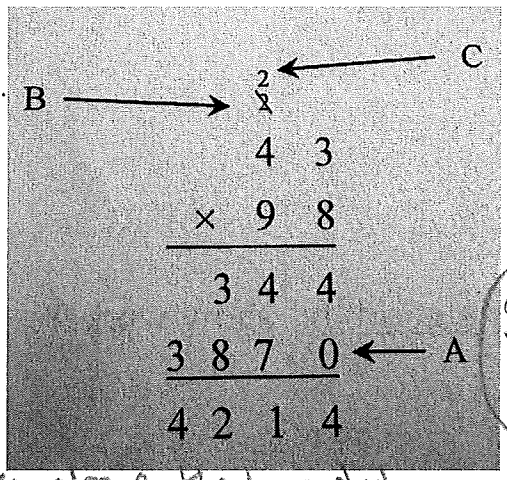


(+1.5) base six
(+1.5) stacked base piece drawing

   2. [2] Perform the subtraction. Show any regrouping.

(+1.5) We do the fact take-aways - 1 long and 3 units from 33_{six}
(+1) and have ▮▮ - □. To finish up decompose a long into 6 units
=> 15_{six} (+1.5) or 11 Ten

2. A student in TMath 171 class shows how to do multiplication (in base 10) the way that they were taught.



crossed out b/c used it up

   1. [1] Explain why a 0 was written at location A.
Line A is recording 90×43. We record that this is 9×43 longs with placing a zero in the units spot

   2. [2] Explain why there is the 2 above the 4 in location B. Why is the 2 crossed out?
(+1.5) The 2 is from the 8 units × 3 units
(+1) which is 24 units or 2 longs 4 units.
(+1.5) The 2 longs need to be regrouped with the other longs which is why it is written above the longs digit

3. Consider the expression (with subtraction, addition, and multiplication): $50 - 6 + (11 \times 3)$

   1. [2] Circle the operation in the expression that should be performed first and perform that operation.
subtraction (+1.5)
$50 - 6 + (11 \times 3) = 50 - 6 + 33$
(+1.5) (+1)

   2. [1] Identify the next operation to be performed.
$50 - 6 + 33$ (+1.5)
PEMDAS (+1.5)
↳ addition is not before subtraction but in order of being written from left to right
so $44 + 33 = 77$