

**Term Test 1**  
**February 3, 2014**  
**T101 Spring 2014**  
**Enrique Areyan**

Name: \_\_\_\_\_

In all problems you must **show your work** to receive credit (except for short answer problems). No books, notes, calculators, computers, or cellphones are allowed. Please try to fit your answer in the space provided, and do not use any additional paper of your own. If you need more space you can continue on the back of the same page; please indicate clearly that your answer is continued on the back. Total is 100 points.

Question	Points	Question	Points	Question	Points
1	/12	2	/16	3	/16
4	/20	5	/12	6	/12
7	/12				

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1. (12 points) Indicate whether each problem depicts partitive or measurement division by labelling it with a P or M in the blank next to the problem. **Do not solve.**

(a) \_\_\_\_\_ Peter put 32 books into bags of 8 books. How many bags are there?

(b) \_\_\_\_\_ Peter put 32 books equally into 8 bags. How many books are there in each bag?

(c) \_\_\_\_\_ If the \$12,000 lottery prize is split equally among 3 people, how much does each get?

(d) \_\_\_\_\_ Bart has 6 boxes of pencils with the same number of pencils in each box. Altogether, he has 24 pencils. How many pencils are in each box?

2. Answer the following questions in base eight (without using base ten at all).

(a) (8 points) Count by threes in base eight, starting from  $(0)_8$  to just past  $(40)_8$ .

(b) (8 points) In the previous part, you should have landed on  $(22)_8$ . Use base blocks to describe why.

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3. (16 points) Use the given model or method to solve the following base eight arithmetic problems:

(a) (8 points)  $(163)_8 - (33)_8$  using compensation as a mental math strategy

(b) (8 points)  $(32)_8 \times (57)_8$  using lattice algorithm.

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4. (20 points) Use chip model to find the answer to the following arithmetic problems.

(a)  $(12)_8 \times (3)_8$

(c)  $(12)_8 \times (20)_8$

(b)  $(12)_8 \times (10)_8$

(d)  $(12)_8 \times (23)_8$

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5. (12 points) [USE TEACHER'S SOLUTION] Betty has twice as many stickers as Anna. Anna has 40 more stickers than Cathy. They have 300 stickers altogether. How many stickers does Betty have?

6. (12 points) [USE TEACHER'S SOLUTION] David had \$90 and Peter had \$200. After they were each given an equal amount of money, Peter had twice as much money as David. How much money did each boy receive?

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7. (12 points) Use SCA division algorithm to find  $123456 \div 12$ . Carefully organize your work and write all steps used in the algorithm.