

Name: _____

Fall 2011

Section: _____

Exam # 3A for MA 201 - Math for Elementary Teachers

11/22/11

On the following problems you must show all of your work to receive full credit. Be sure to read the questions carefully and answer the question that is asked. Calculators, notes, textbooks, help from your neighbor, and any other outside sources of information are not permitted on this exam. Please turn **OFF** your cell phones during the exam.

1. (8 points) Using the tables provided to you, write the Indo-Arabic equivalent of each of the following.

(a)

(b)

(c)

(d)

2. (9 points) Suppose you have 4 mats, 5 strips, and 7 units in one hand and 2 mats, 8 strips, and 6 units in the other.

(a) Illustrate this situation.

(b) Now illustrate putting all of the pieces together.

(c) Illustrate an exchange to lower the number of manipulative pieces that you need, while keeping the number that the pieces represent the same.

(d) Illustrate another exchange to lower the number of manipulative pieces that you need, while keeping the number that the pieces represent the same.

(e) What do each of the steps you illustrated above represent mathematically?

3. (8 points) Using the tables provided to you, write out the ZIP+4 code given by the bar code below in Indo-Arabic Numerals.

4. (8 points) Determine d so that the number below could be a valid credit card number.

430 d 1072 8761 2013

5. (8 points)

(a) Represent the integer -6 on a number line.

(b) What is the absolute value of -6? Use your answer in part (a) to explain justify your answer.

6. (8 points) Are the two integers represented below the same? How do you know?

7. (9 points) Solve the following problems using a number line.

(a) $8+(-7) =$

(b) $(-3)-4 =$

(c) $(-1)-(-6) =$

8. (9 points) Solve the following problems using colored counters.

(a) $5+(-2) =$

(b) $(-8)-5 =$

(c) $(-7)-(-6) =$

9. (8 points) If the mail carrier brings you three checks for \$23 each and four bills – two for \$12 each and two for \$21 each – are you richer or poorer and by how much?

10. (8 points) If the temperature is -18°F on Monday, what temperature is it on Friday if Friday's temperature is found by dividing Monday's temperature by -3 ?

11. (8 points) If it is 4PM and Jenny has been at work for 9 hours, what time did she clock in?

12. (9 points) Solve each of the following.

(a) $3 +_{10} 8 =$

(b) $7 -_{10} 9 =$

(c) $3 \times_{10} 6 =$