

Exam 1
T101 Fall 2003

Name _____
PID _____

1. (2 pts) Write the number “Two thousand three hundred fifty two” in Egyptian.

2. (2 + 2 = 4 pts) The _____ property and _____ property are special cases of the Any-order property of addition.

3. (5 pts) Define *algorithm*.

4. (2 + 2 = 4 pts) In the subtraction problem, $17 - 8 = 9$, the number 17 is called the _____ and the number 9 is called the _____.

5. (4 pts) (Circle all that apply.) The long division algorithm is a prerequisite for learning:

Successive Approximation	Measurement Division	Number bonds
Distributive Property	Mental Math	Converting fractions to decimals

6. (5 pts) Fill in the blank:
 - (a) The most useful model for teaching the commutative property is _____.
 - (b) The most important arithmetic property learned in teaching the multiplication algorithm is _____.
 - (c) After estimating the quotient and calculating the remainder in long division, it is necessary to check that $0 \leq \text{remainder} < \text{_____}$.
 - (d) When $176 \div 8$ is presented as finding the number of segments of size 8 that fit in a segment of size 176, one is using the _____ interpretation of division.
 - (e) The most complicated case in learning the subtraction algorithm is _____.

7. (6 pts) Compute 478×86 using the Lattice method.

8. (12 pts) Use mental math to compute the following. Write down your answer in a way that clearly shows the steps involved in solving the problem mentally.

a. $38 + 39 + 1162$

b. 127×4

c. 25×99

d. $132 \div 12$

9. (3 + 3 = 6 pts) Find estimations for the following using the technique specified.

(a) Simple Estimation: $6246 \div 74$

(b) Over Estimate: $2523 - 437$

10. ($7 + 7 + 7 = 21$ pts) For the following word problems, give a full teacher's solution which *does not use algebra*.

(a) A shop sold 178 cakes on Monday. It sold 326 cakes total for Monday and Tuesday. How many more cakes did it sell on Monday than on Tuesday?

(b) Jill has four times as many stamps as David. How many stamps must Jill give to David so that they each have 90 stamps?

(c) Peter has twice as many stickers as Ali. Ali has 40 less stickers than Lihua. They have 300 stickers altogether. How many stickers does Peter have?

11. ($4 + 2 + 4 = 10$ pts) Write a word problem using partitive division for $92 \div 4$ by following these steps:

(a) Draw the Singapore bar diagram which corresponds to partitive division for $92 \div 4$ and use mental math to solve the problem.

(b) Write the interpretive question which corresponds to partitive division for $92 \div 4$.

(c) Make up an interesting, short, realistic, one-step word problem using the partitive interpretation which corresponds to $92 \div 4$.

12. (6 pts) Explain why $0 \div 0$ is undefined.

13. (7 pts) Find $4370 \div 47$ by long division. Show your estimates and use of place value to obtain the quotient of each step.
14. ($4+2+2 = 8$ pts) (a) Explain the place value process in detail. (b) Using 2-digit numbers, give an example of an addition problem which does not use Step (ii). (c) Using 2-digit numbers, give an example of an addition which does use Step (ii).