

NAME _____

EXAM 2 – Part 1 – Wednesday, Mar. 2, 2005.
Math 320: Math for Elementary School Teachers

20–MINUTES MENTAL DRILL

INSTRUCTIONS: ONLY WRITE THE FINAL ANSWER, NO SCRATCH PAPER, NO SCRIBBLING ON THIS SHEET, NO CALCULATORS, USE INK PEN ONLY. EXERCISE THE COMPUTATIONAL TRICKS (THINKING STRATEGIES) WE HAVE BEEN LEARNING. EACH QUESTION IS WORTH 2 POINTS.

1. $16 \times 18 =$

2. Overestimate $2523 - 437$

3. Average 6154, 6142, 6153, 6151 =

4. $51^2 =$

5. $38 \times 42 =$

6. If $3x + 1 + 4x = 15$, $x =$

7. $25 \times 99 =$

8. $64 \times 32 =$

9. $132 \div 12 =$

10. The tip on 36.20\$ =

NAME _____

EXAM 2 – Part 2 – Wednesday, Mar. 2, 2005.
Math 320: Math for Elementary School Teachers

PART 2: 30–MINUTES TEST

INSTRUCTIONS: USE SCRATCH PAPER, WRITE COMPLETE AND FINAL ANSWERS USING INK PEN, NO SCRIBBLING, NO CALCULATORS. PARTIAL CREDIT WILL BE GIVEN IF DESERVED, SO JUSTIFY AND SHOW ALL YOUR WORK.

1. (5pts) Fill in the blanks:

(a) In the division $44 \div 11 = 4$, the number 44 is called the _____

and the number 11 is called the _____.

(b) After estimating the quotient and calculating the remainder in long division, it is necessary to check $0 \leq \text{remainder} < \text{_____}$.

(c) Jane put 14 dolls equally into 4 dollhouses. There were then _____ dolls in each dollhouse, a total of _____ dolls distributed into the dollhouses, and _____ left over.

(d) The most complicated case in learning the subtraction algorithm is _____.

(e) The multiplication algorithm hinges on the following arithmetic property: _____.

2. (5pts) Find $4370 \div 47$ by long division. Show your estimates at each step.

3. (5pts) Give a full “teacher’s solution” for the following word problem. Draw a bar diagram and also show the algebra.

“Harry bought 155 oranges for 35\$. He found that 15 of them were rotten. He sold all the remaining oranges at 7 for 2\$. How much money did he make?”

4. (5pts) Simplify as much as possible. Write out every step neatly.

$$\frac{2^5 \cdot 6^2 \cdot 18^2}{3^4 \cdot 4^2}$$

5. (5pts) Explain with the measurement approach how the division algorithm works for $945 \div 7$.

6. (5 pts) Compute the expression below without using the algorithms, but using the arithmetic properties to your advantage. Write all the steps you have taken and show the strategies you have used.

$$[2^3 \times 7 + (3^2 \times 2^3 - 2 \times 5^2 + 2^9 \div 2^2) \div 15 - 2] \div 2^6$$