Math 085 - Test 1a

Name key

September 5, 2013

Score _____

Part I - Solve each problem. Show all work to receive full credit. Supply explanations where necessary. Each problem is worth 2 points. CALCULATORS ARE ALLOWED ON THIS PORTION OF THE TEST.

1. Compute 8^6.

$8 \times 8 \times 8 \times 8 \times 8 \times 8 =$ **262,144**

2. Jonni needs \$1973 for a trip to Portugal. She has already saved up \$896. How much more must Jonni save?

$1973 - 896 = 1077$ **\$1077**

3. Find the quotient and remainder: $13693 \div 27$ = **507 r 4**

Quotient is 507

$507 \times 27 = 13689$

Remainder is $13693 - 13689 = 4$

4. Evaluate the following expression: $9[7(8-2) - 2^4 + 36 \div 3]$ = **342**

Directly from calculator

5. A rectanglular rug is 57 inches wide and 89 inches long. Find the area of the rug.

$57 \times 89 = 5073$

Area = 5073 in²

Math 085 - Test 1b

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Part II - Solve each problem. Show all work to receive full credit. Supply explanations where necessary. Each problem is worth 2 points. CALCULATORS ARE NOT ALLOWED ON THIS PORTION OF THE TEST.

1. Estimate by rounding to the nearest ten: $65 \times 84 \approx 70 \times 80 = \boxed{5600}$

2. Find the product of 37 and 59.

$$\begin{array}{r} 59 \\ \times\ 37 \\ \hline 63 \\ 350 \\ 270 \\ 1500 \\ \hline 2183 \end{array}$$

$\boxed{2183}$

3. Aunt Sally evaluated $15 - 6 \cdot 2$ as follows:

$$15 - 6 \cdot 2 = 9 \cdot 2 = 18$$

What did Aunt Sally do wrong? What answer should she get?

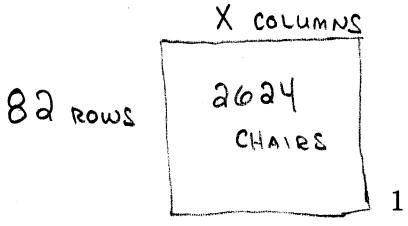
Aunt Sally did $15-6=9$ first when she should have done $6 \cdot 2 = 12$ first.

$15 - 6 \cdot 2 = 15 - 12 = \boxed{3}$

4. Is $x = 2$ a solution of the equation $7x + 8 = 22$? Explain your reasoning.

Yes! $7(2)+8 = 14+8 = 22$ ✓

5. A large auditorium contains a rectangular array of chairs. There are 2624 chairs in all, and they are arranged into 82 rows. Explain how you could find the number of columns. (You don't actually need to compute the number.)



$82x = 2624$

$x = 2624 \div 82$

6. Round 84735 to the nearest

(a) ten 84740

(b) hundred 84700.

(c) thousand 85000

(d) ten thousand 80000.

7. Evaluate: $3 \cdot 5 + 2(10 - 3^2)^2$ $= 15 + 2(10-9)^2 = 15 + 2(1)$

$= \boxed{17}$

8. Solve each equation.

(a) $7x = 63$ $x = 63 \div 7 = 9$ $\boxed{x = 9}$

(b) $w - 9 = 24$ $w = 24 + 9 = 33$ $\boxed{w = 33}$

9. Show a way to estimate $37 + 32 + 35 + 29 + 31 + 28 + 34$.

All are about 30

Sum $\approx 7 \times 30 = 210$

10. In the expression $5 + 6[7(8 - 2^2) - 9]$, which operation should you do first? Which operation would you do last?

First operation is to compute 2^2.

Last operation is the addition.

11. Fred computed $7 \cdot 13$ as follows:

$$7 \cdot 13 = 7 \cdot (10+3) = 7 \cdot 10 + 7 \cdot 3 = 70 + 21 = 91$$

What is the name of the property that Fred used? Now use that property to rewrite $4 \cdot (5+9)$.

DISTRIBUTIVE PROPERTY

$4 \cdot (5+9) = 4 \cdot 5 + 4 \cdot 9 = 20 + 36 = 56$

12. Find the quotient and remainder: $8917 \div 6$

$$6 \overline{)\,8917} \quad 1486 \text{ r } 1$$

1486 r 1

13. Evaluate: $[6 \times 3 - 2(24 \div 3)]^3$

$= [18 - 2(8)]^3 = [18-16]^3 = (2)^3 = \boxed{8}$

14. Solve each equation.

(a) $19 + y = 59$ $\quad y = 59 - 19 = 40$ $\quad \boxed{y = 40}$

(b) $x \div 8 = 6$ $\quad x = 6 \cdot 8 = 48$ $\quad \boxed{x = 48}$

15. Evaluate each expression.

(a) $12 \div 6 \div 2 + 2^2 - 8 \div 2 = 2 \div 2 + 4 - 8 \div 2 = 1 + 4 - 4 = \boxed{1}$

(b) $3[6(4-2) \div 3 \cdot (2-1)] = 3[6(2) \div 3(1)] = 3[12 \div 3 \cdot 1] =$

$3(4) = \boxed{12}$

Part III - Circle the best answer for each problem. Each problem is worth 2 points. CALCULATORS ARE NOT ALLOWED ON THIS PORTION OF THE TEST.

1. By using the distributive property, which number should fill in the blank?

$$6 \cdot (3+9) = 18 + \underline{\quad 6 \cdot 9 \quad}$$

(a) 12
(b) 39
(c) 9
(d) 54

2. When evaluating the expression $(4+6) \cdot 6 \div 3 - 2$, which operation should be done first?

(a) multiplication
(b) division
(c) subtraction
(d) addition

PARENTHESES

3. In the divison fact $186 \div 8 = 23$ R 2, which number is the dividend?

(a) 186
(b) 8
(c) 23
(d) 2

4. Think about the following problem:

Sabrina's tuition for her 5 classes is \$3425. If each class costs the same amount, how much is each class?

Which of these equations can be used to solve the problem?

(a) $x - 3425 = 5$
(b) $5 + x = 3425$
(c) $5x = 3425$
(d) $x \div 3425 = 5$

5. Which one of the these expressions is NOT defined?

(a) $0 \div 7$
(b) $15 \div 0$
(c) $0/3$
(d) $11/1$

DIVISION BY ZERO IS NOT DEFINED.