

Math 260, Exam 1A  
 Chapters 1 and 2

1. (4 points) Write the following number in standard form

one hundred-two thousand, fourteen

102,014

2. (4 points) Write the place value for the digit indicated in

1,234,567,890

1	billions
0	ones
5	hundred thousands
3	ten millions

3. (4 points)  
 Find the sum of 9,873 and 16,375.

Complete the grid provided to show your work.

1	1	1		
1	6	3	7	5
+	9	8	7	3
2	6	2	4	8

4. (4 points)  
 Find the difference of 35,276 and 18,999.

Complete the grid provided to show your work.

	2	14	11	16	16
	<del>3</del>	<del>5</del>	<del>2</del>	<del>7</del>	<del>6</del>
-	1	8	9	9	9
	1	6	2	7	7

5. (4 points)

(a) Round to the nearest ten

456,123

456,120

(b) Round to the nearest thousand

456,789

457,000

6. (4 points)

(a) Round to the nearest hundred billion

739,567,001,913,210

739,600,000,000,000

(b) Round to the nearest trillion

789,543,123,913,210

790,000,000,000,000

7. (4 points)

Find the product of 12,436 and 7.

Complete the grid provided to show your work.

1	3	2	4	
1	2	4	3	6
×				7
8	7	0	5	2

8. (4 points)

Find the product of 48 and 53.

Complete the grid provided to show your work.

		5	3
	×	4	8
	4	2	4
2	1	2	
2	5	4	4

**9.** (4 points)

Find the quotient of 5427 and 81.

$$\begin{array}{r}
 67 \\
 81 \overline{)5427} \\
 \underline{486} \\
 567 \\
 \underline{567} \\
 0
 \end{array}$$

**10.** (4 points)

Find the quotient of 2518 and 68.

*You may use remainder notation.*

$$\begin{array}{r}
 37 \text{ R}2 \\
 68 \overline{)2518} \\
 \underline{204} \\
 478 \\
 \underline{476} \\
 2
 \end{array}$$

**11.** (4 points)

(a) Write the following expression in exponential notation.

$$m \cdot m \cdot m \cdot m$$

$$m^4$$

**12.** (4 points)

(a) Simplify the following expression

$$8 + 2(9 - 2 \cdot 3)$$

$$= 8 + 2(9 - 6)$$

$$= 8 + 2(3)$$

$$= 8 + 6$$

$$= 14$$

(b) Write the following expression in expanded form. Then find the value of the expression.

$$4^3$$

$$= 4 \cdot 4 \cdot 4$$

$$= 16 \cdot 4$$

$$= 64$$

(b) Simplify the following expression

$$(5 + 4)(9 - 5)^2$$

$$= (9)(4)^2$$

$$= (9)(16)$$

$$= 144$$

13. (4 points) Evaluate each given expression.

(a)

$$9x - 12 \text{ when } x = 4$$

$$\begin{aligned} &= 9 \cdot 4 - 12 \\ &= 36 - 12 \\ &= 24 \end{aligned}$$

(b)

$$w^2 + 5w \text{ when } w = 3$$

$$\begin{aligned} &= 3^2 + 5 \cdot 3 \\ &= 9 + 15 \\ &= 24 \end{aligned}$$

15. (4 points) Write an algebraic expression, using the variable "x" for each

(a) the **sum** of a number **and** 25

$$x + 25$$

(b) three less than twice a number

$$2x - 3$$

14. (4 points) Simplify each expression by combining like terms.

(a)

$$15y + 6y + y$$

$$\begin{aligned} &= 21y + y \\ &= 22y \end{aligned}$$

(b)

$$x^2 + 5x + 4x^2 + 6x^2 + x$$

$$\begin{aligned} &= x^2 + 4x^2 + 6x^2 + 5x + x \\ &= 5x^2 + 6x^2 + 5x + x \\ &= 5x^2 + 6x^2 + 5x + x \\ &= 11x^2 + 5x + x \\ &= 11x^2 + 5x + x \\ &= 11x^2 + 6x \end{aligned}$$

16. (4 points) Translate each algebraic expression into words

(a)  $m - 15$

the \_\_\_\_\_ **difference** \_\_\_\_\_ of  $m$  and 15

(b)  $7(x - 4)$

seven times the \_\_\_\_\_ **difference** of a number and 4

**17.** (4 points) Solve each equation using the subtraction property of equality.

(a)

$$\begin{array}{r} c + 10 = 24 \\ -10 \quad -10 \\ \hline c = 14 \end{array}$$

Check:  $c + 10 = 24$   
 $14 + 10 = 24$  Yes.

(b)

$$\begin{array}{r} m + 57 = 362 \\ -57 \quad -57 \\ \hline m = 305 \end{array}$$

Check:  $m + 57 = 362$   
 $305 + 57 = 362$  Yes.

**19.** (4 points) Write an equation for the following word problem and then solve the equation.

Twelve more than a number is twenty-four. What is the number?

(a) Equation:

$$\begin{array}{r} x + 12 = 24 \\ -12 \quad -12 \\ \hline x = 12 \end{array}$$

Check:  $x + 12 = 24$   
 $12 + 12 = 24$  Yes.

(b) The number is 12

**18.** (4 points) Solve each equation using the addition property of equality.

(a)

$$\begin{array}{r} k - 15 = 21 \\ +15 \quad +15 \\ \hline k = 36 \end{array}$$

Check:  $k - 15 = 21$   
 $36 - 15 = 21$  Yes.

(b)

$$\begin{array}{r} x - 38 = 126 \\ +38 \quad +38 \\ \hline x = 164 \end{array}$$

Check:  $x - 38 = 126$   
 $164 - 38 = 126$  Yes.

**20.** (4 points) Write an equation for the following word problem and then solve the equation.

The difference of a number and fifty-seven is five. What is the number?

(a) Equation:

$$\begin{array}{r} x - 57 = 5 \\ +57 \quad +57 \\ \hline x = 62 \end{array}$$

Check:  $x - 57 = 5$   
 $62 - 57 = 5$  Yes.

(b) The number is 62

21. (4 points) Use divisibility tests to determine if 75 is divisible by

	Yes/No
2	no
3	yes
5	yes
6	no
10	no

22. (4 points) Use divisibility tests to determine if 6250 is divisible by

	Yes/No
2	yes
3	no
5	yes
6	no
10	yes

23. (4 points) Find the prime factorization of

(a) 18

$$\begin{array}{r}
 2 \overline{)18} \\
 \underline{36} \\
 3 \overline{)9} \\
 \underline{30} \\
 3 \\
 18 = 2 \cdot 3^2
 \end{array}$$

(b) 120

$$\begin{array}{r}
 2 \overline{)120} \\
 \underline{240} \\
 2 \overline{)60} \\
 \underline{120} \\
 2 \overline{)30} \\
 \underline{60} \\
 3 \overline{)15} \\
 \underline{30} \\
 5 \\
 120 = 2^3 \cdot 3 \cdot 5
 \end{array}$$

24. (4 points) Find each least common multiple

(a)  $LCM(12, 18) = 36$

$$\begin{array}{r}
 2 \overline{)12 \ 18} \\
 \underline{36 \ 9} \\
 3 \overline{)6 \ 9} \\
 \underline{12 \ 3} \\
 2 \ 3 \\
 LCM(12, 18) = 2 \cdot 3 \cdot 2 \cdot 3 = 36
 \end{array}$$

(b)  $LCM(40, 50) = 200$

$$\begin{array}{r}
 2 \overline{)40 \ 50} \\
 \underline{80 \ 25} \\
 5 \overline{)20 \ 25} \\
 \underline{40 \ 5} \\
 4 \ 5 \\
 LCM(40, 50) = 2 \cdot 5 \cdot 4 \cdot 5 = 200
 \end{array}$$

