

# Math I Unit 4 Study Guide

Teacher: \_\_\_\_\_

Student Name: \_\_\_\_\_

Answer Key

**DIRECTIONS:** Do all work on separate scratch paper. Your work must be neat, well organized, complete, and lead to the answer you give, circle your answers. Copy your answers to the appropriate place provide on this test.

**OBJ. 1: Simplifying Exponents**

- $(a^3b^6c)^2(a^3b)^8(a^{-5}b^{-8}c^{3.6})^0$    
 *Handwritten:  $a^6 b^{12} c^2 a^{24} b^8$*
- $(4m^5n^{-8}m^{-7})^{-3}$    
 *Handwritten:  $4^{-3} m^{-15} n^{24} m^{21}$*
- $\frac{18x^{-6}y^8}{-32x^{-2}y^{25}}$    
 *Handwritten:  $-\frac{9}{16}$*
- $(3x^{-9})^3(7x^{10})$    
 *Handwritten:  $27x^{-27} 7x^{10}$*

$4^3 = 64$

**OBJ. 2: Addition and Subtraction of Polynomials**

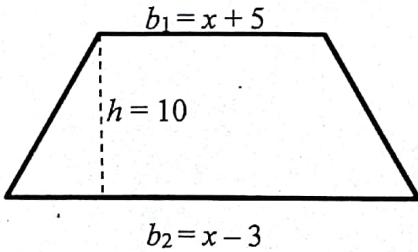
- $(8x^2 - 3x + 17) + (x^2 - 6x - 5)$    
 *Handwritten:  $9x^2 - 9x + 12$*
- $(17x^2 + 5x) + 7(2x^2 + 3x)$    
 *Handwritten:  $14x^2 + 21x + 14x^2 + 21x = 28x^2 + 42x$*
- $6(5x^2 - 10x - 12) - 4(3x - 6 + 9x^2)$    
 *Handwritten:  $30x^2 - 60x - 72 - 12x + 24 + 36 = 30x^2 - 36x - 12$*
- $(14x^4 - 3x^3 - 8x - 4) - (34x^4 + 50x^2 - 6x + 10)$

**OBJ. 3: Application**

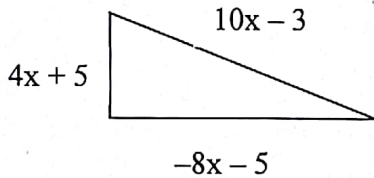
9. The area of a trapezoid can be found using the formula

$A = \frac{1}{2}h(b_1 + b_2)$ , where  $A$  is the area,

$h$  is the height, and  $b_1$  and  $b_2$  are the lengths of the bases. What is the area of the trapezoid below as an expression in simplest form?



10. What is the value of  $x$  when the perimeter of the triangle below is 93?



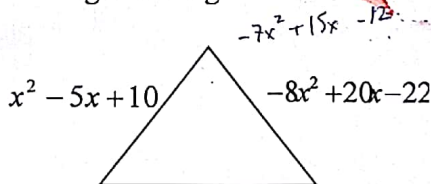
$6x - 3 = 93$   
 $6x = 96$   
 $x = 16$

11. Find the area of the shaded region.

SMALL rectangle  $A = 5x^2 + 16x$     BIG rectangle  $A = 36x^2 - 42x - 7$



12. If the perimeter of the triangle is  $9x^2 - 16x + 32$ , what is the polynomial that represents the missing side length.



Objective	Score
1	A B NY
2	A B NY
3	A B NY
4	A B NY
5	A B NY

**ANSWERS:**

- $a^{30} b^{20} c^2$
- $\frac{m^6 n^{24}}{64}$
- $-\frac{9}{16x^4 y^{17}}$
- $189x^{17}$

4/4 = 100    3/4 = 85    0-2 = NY

- $9x^2 - 9x + 12$
- $31x^2 + 26x$
- $-6x^2 - 72x - 48$
- $-20x^4 - 3x^3 - 50x^2 - 2x - 14$

4/4 = 100    3/4 = 85    0-2 = NY

- $10x + 10$
- $x = 16$
- $31x^2 - 58x - 7$
- $16x^2 - 31x + 44$

4/4 = 100    3/4 = 85    0-2 = NY

- initial profit
- $y = -\frac{2}{5}x + 2$
- D:  $0 \leq \text{pencils} \leq 100$     R:  $10 \leq \text{profit} \leq 40$
- $x = 5$

4/4 = 100    3/4 = 85    0-2 = NY

- $7x^3 y^2 z$
- $3xy^4 z^2$
- $6x^4 - 4x^3 + 2x^2$
- $6x^4 - 2x^3$

4/4 = 100    3/4 = 85    0-2 = NY