

Name _____
Date _____

Intermediate Algebra – MTH 104
Class #5

Station 1. Order of Operations

1. $-9 - (-5) - |-7|$

2. $3[4 + (-2)(8)] + 3^3$

3. Evaluate: $5x^2 + 4x$ when $x = 2$

4. Evaluate: $\left(-\frac{5}{3}\right)^3$

5. Evaluate: $4x^2 - 3y - 10$ when $x = 4$ and $y = -1$

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Station 2 – Positive Exponents – Rules of Exponents

Write all final answers with positive exponents only.

1. Simplify: $(-7w^{-7})(-5w^{-3})$

2. Simplify: $(-10x^5y^2)^2$

3. Simplify: $\left(\frac{3x}{4y^2}\right)^{-2}$

4. Simplify: $\left(\frac{10x^2y}{5xy}\right)^{-3}$

5. Simplify: $\left(\frac{x^8y^{-2}}{x^{-2}y^3}\right)^2$

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Station 3: Scientific Notation

1. Write in Proper Scientific Notation:

a. 0.041 _____

b. 760,000 _____

c. 0.0000126 _____

d. 40,500,000 _____

2. Express each value in Scientific Notation:

a. $(4.78 \times 10^9)(1.96 \times 10^5)$ _____

b. $(8.32 \times 10^{-8})(9.14 \times 10^{-2})$ _____

c. $\frac{4.36 \times 10^{-4}}{8.17 \times 10^{-8}}$ _____

d. $\frac{3.11 \times 10^{11}}{4.72 \times 10^{-9}}$ _____

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Station 4: Equations and Literal Equations

1. Solve and check for the Given Variable.

a. $5x + 3 - 2x = 9$ _____

b. $4x - 8 = -4(2x - 3) + 4$ _____

c. $\frac{1}{2}(6r - 10) = 7$ _____

d. Solve for x: $ax + bcx = D$ _____

e. Solve for h: $A = \frac{1}{2}bh$ _____

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Station 5: Word Problems

1. Kate buys a monthly bus pass, which will entitle her to unlimited bus rides for \$45 per month. Without the pass, the rides are \$1.80 per ride. How many rides will Kate have to pay for to make the monthly fee a better deal?

2. The length of a rectangle is represented by $5x - 7$ and the width is represented by $3x + 2$. If the perimeter of the rectangle is 70 inches, find the dimensions of the rectangle.

3. How many pounds of candy worth 70 cents per pound must be mixed with 30 pounds of candy worth 90 cents per pound to produce a mixture which can be sold for 85 cents per pound?

4. A sum of \$3500 is invested at two rates. Part is invested at a 5% rate and the rest at an 8% rate. The total annual return is \$250. Find the amount invested at each rate.

5. Find three consecutive even integers such that the sum of the smallest and twice the second is 20 more than the third.