

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

Section: \_\_\_\_\_

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## Workshop 1 – Math Review

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Algebra is an essential skill in solving scientific problems. The following problems review the type of math you will need to use in this course.

1. Given the following equation:  $y = 3x^2 + 7$

a) Show your work using algebra (symbols only) to solve for x:

b) If  $y = 100$ , solve for x by entering into your re-arranged equation:

Write your numerical answer from the calculator: \_\_\_\_\_

2. a) Given the equation:  $M_1V_1 = M_2V_2$ , solve for  $M_2$  (hint: rearrange the symbols)

b) If  $M_1 = 0.100$ ,  $V_1 = 5$ , and  $V_2 = 250$ , then what is the numerical value of  $M_2$ ?

$M_2 =$  \_\_\_\_\_

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3. For the equation  $\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$ , use algebra to solve for  $T_2$ :

Ask yourself: Did you *actually* solve for  $T_2$  or is your answer in terms of  $T_2^{-1}$ ?

Check your math: If  $V_1 = 950,000$ ,  $V_2 = 115,600$ ,  $P_1 = 0.980$ ,  $T_1 = 298$ ,  $P_2 = 0.905$ , what does  $T_2 = ?$

$T_2 =$  \_\_\_\_\_

4. Use Power Rules to solve for the following (without a calculator!):

a)  $\frac{10^8}{10^2} =$  (a) \_\_\_\_\_

b)  $(10^4)(10^3) =$  (b) \_\_\_\_\_

c)  $(10^1)(10^{-2}) =$  (c) \_\_\_\_\_

5. a) Write  $10^{-7}$  as a fraction.

b) Write  $10^{-2}$  as a decimal.

6. Average the following numbers:

3.75      4.23      4.95      3.80      4.41      4.72      \_\_\_\_\_