

Unit 1 Study Guide

Name _____ Class Period _____

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

What you need to know & be able to do	Things to remember		
1. Unit Conversions		1. Convert 6 liters to quarts.	2. A bowl of cereal weighs 60 grams. How heavy is it in kg?
<ul style="list-style-type: none"> • There are 5280 feet in one mile • There are 0.034 ounces in one milliliter • There are 0.454 kg in one pound • There are 1.6 kilometers in one mile • There are 73 gallons in 2 barrels • There are 1.05 quarts in one liter • There are 4 quarts in one gallon • There are 16 ounces in a pound. • There are 52 weeks in a year. 		3. Convert 12 kilometers to feet.	4. You are in a car traveling that is traveling at 65 mph. How fast is that in ft/min?
2. Identify Vocabulary	<ul style="list-style-type: none"> • # of terms • Coefficients • Variables • Constants 	5. How many terms are in the expression $-12x^3 + 7x^2 - 4x - 19$?	6. What are the variables, coefficients, and constants in the expression $20x^4 - 11x + 3$?
3. Linear Models	$y = mx + b$ <ul style="list-style-type: none"> • m – increase or decrease • b – starting point 	7. Lucy gets paid \$150 a week and \$10 for every computer she sells. Write an equation that represents her weekly income.	8. Andy wants to mail a package. It costs \$4.99 plus \$0.30 for every ounce the package weighs. Write an equation and find how much it will cost for a 12 oz. package.
4. Exponential Models	$y = a * (b)^x$ <ul style="list-style-type: none"> • a – starting point • b – multiple 	9. Your bank account starts out at \$1 and it quadruples every day. How much money will you have in 2 weeks?	10. The number of squirrels in a forest doubles every 3 week. Currently there are 2,000 squirrels around Kennesaw Mountain. How many squirrels will there be in 18 weeks?
5. Consecutive Integers	Start with x. $x + (x+1) + (x+2)+...=$	11. 3 consecutive integers add up to 153. Find the three integers.	12. Three EVEN integers add up to 270. Find the integers.

6. Averages	<ul style="list-style-type: none"> Add the values and x Divide by the number of numbers Set equal to the average Solve for x 	13. You are trying to save \$20 a week to buy a new CD player. During the last 4 weeks you have saved \$35, \$15, \$10, and \$12. How much do you need to save this week to average \$20 for the 5 weeks?	14. Currently, you have made a 78, 83, and an 80 on your tests in math. What do you need to make on the next test in order to get an average of an 82?
7. Rectangle – Find length and width	<ul style="list-style-type: none"> Draw a picture Define your l and w Add all 4 sides Solve for both variables 	15. The length of a rectangle is 11 feet longer than the width. The perimeter of the rectangle is 70 feet. Find the length and the width.	16. The length of a rectangle is nine inches more than the width. The perimeter is 34 inches. Find the length.
8. Solve for 2-variable Equations	$ax + by = c$ <ul style="list-style-type: none"> Never move the variable you're solving for. 	17. Tony is going to buy fruit for a smoothie. He wants raspberries, r , that are \$4 a carton and strawberries, s , that are \$2 a carton. Write an equation to represent all the combinations of fruit if Tony has \$18 to spend.	18. Using your equation from #17, solve for r , the number of raspberries.
			19. If he buys 2 cartons of raspberries, how many strawberries can he buy?
9. Solve for an indicated variable	PEMDAS <ul style="list-style-type: none"> Backwards, from the ground up! 	20. Solve for x: $y = -4x + 16$ 21. Solve for h: $A = \frac{1}{2}bh$	22. Solve for L: $P = 2L + 2W$ 23. Solve for r : $L=2\pi rh$
10. Solving Equations	<ul style="list-style-type: none"> PEMDAS backwards 	24. $4x - 13 = 22 - 3x$ 25. $\frac{8x - 2}{6} = 9$	26. $\frac{x}{4} - 2 = -10$ 27. $9(11 - k) = 3(3k - 9)$
11. Solving Inequalities	<ul style="list-style-type: none"> PEMDAS backwards Flip the inequality sign when multiplying or dividing by a negative 	28. $-2x + 7 \leq 37$ 29. $-28 \geq 12x - 4$	30. $\frac{2}{3}x < 14$ 31. $\frac{3}{10}x + 21 < 0$