Name: _____   Date:_____

Ms. Napolitano   Lessons 15-16

Topic: Numerical /Algebraic Expressions

Homework Day 2

EXPRESSIONS AND EQUATIONS (6.EE.3)

Apply the properties of operations to generate equivalent expressions.

1. Which expression is equivalent to $2(5m) + m$? a) $11m$ b) $12m$ c) $5m + 2$ d) $7m + 2m$	2. Which expression is equivalent to $4x - 3y + x + x + x$? a) $7x$ b) $4x$ c) $6x - 3y$ d) $7x - 3y$
3. The rent for an apartment is $900 per month. The landlord charges one month's rent as a deposit plus a nonrefundable damage cost of $450. The expression $900(n + 1) + 450$ represents the cost of the renting the apartment for n months. Simplify the expression.	4. A square has a perimeter given by the expression $16x + 32y$. Write an expression for the length of one side of the square.

5. Whenever Sabrina visits the gym she lifts weights for 8 minutes and runs on the treadmill for 35 minutes. Write two equivalent expressions and find the total minutes that Sabrina exercise for 5 days.

EXPRESSIONS AND EQUATIONS (6.EE. 4)

Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).

1. Which pair of expressions is equivalent? a) $6(8x)$ and $14x$ b) $6(8x)$ and $48x$ c) $6x + 8x$ and $14x^2$ d) $6x + 8x$ and $48x$	2. Select all of the expressions that have $5x + 4y$ as one of their factors. a) $15x + 12y$ b) $3x + y + 2x + 2y$ c) $8x + y + 2x + 7y$ d) $25x + 16y$
3. Which expression does not equal 18? a) $3k$ for $k = 6$ b) $3 + k$ for $k = 15$ c) $\frac{k}{3}$ for $k = 6$ d) $k - 10$ for $k = 28$	4. Dana's Custom Necklaces charges x dollars to make a custom necklace, y dollars to ship the necklace, and \$8 to insure the necklace. The expression $4x + 4y + 32 + x + y$ represents the total cost of making, shipping, and insuring 4 necklaces, and making and shipping 1 necklace without insurance. Write the expression in simplified form.

5. Ms. McLean wrote the expression below on the chalkboard for her class. She asked the students to write an equivalent expression using no more than one set of parentheses.

$$5(4x + 6y + 4z) + 4(x - 2z)$$

- Simone wrote $20x + 30y + 20z$
- Lennox wrote $6(4x + 5y + 2z)$
- Daniele wrote $8x + 6y + 2z$

Which, if any, of the three students wrote an expression that is equivalent to Ms. Mclean's expression?

EXPRESSIONS AND EQUATIONS (6.EE. 6)

Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

1. The new building in the financial district is 245 feet taller than the clock tower. Let h represent the height of the clock tower. Write an expression for the height of the new building?	2. Which situation can be represented by the expression $2.5x$? a) the total cost of an item that is x dollars more than \$2.50 b) the area of a rectangle with side lengths 2.5 and x c) the amount of change when \$2.50 is used to pay for an item costing x dollars d) the number of square feet in each lot when 2.5 acres is partitioned into x equal sections
3. In the last soccer game, Brandon scored 2 points more than one third of his team's total points. Let n represent the number of points Brandon's team scored. Write an expression for the number of points Brandon scored.	4. A music website charges its members a one-time fee of \$29 and a monthly rate of \$5. Let m represent the number of months. Write an expression for the total amount paid after m months.

5. In the diagram of a quadrilateral below, the variables represent the lengths of the sides, in centimeters. Write an expression using the variables a and b that could be used to find the perimeter of the quadrilateral. If $a = 12$ and $b = 9$ what is the perimeter of the quadrilateral?