Accelerated Math Notes
Variables and Expressions
(Section 1-3)

Write an algebraic expression for each of the following.

1) the product of seven and a number
Let n = the number $7n$

2) four less than a number
Let n = the number $n - 4$

3) the sum of a number squared and the same number cubed
Let n = the number $n^2 + n^3$

4) the number of feet equivalent to a certain number of inches
Let n = the # of inches $\frac{n}{12}$

5) the number of centimeters equivalent to a certain number of meters
Let n = the # of ~~centimeters~~ meters $100n$

6) three more than the quotient of a number and two
Let n = the number $\frac{n}{2} + 3$

To evaluate algebraic expressions,
ALWAYS substitute numbers for the variables first!!!
Make it a numerical expresion and then evaluate!

Evaluate $a^2 + 5a + 7$ **if** $a = 3$

$(3)^2 + 5(3) + 7$

$9 + 15 + 7$

31

Evaluate if $a = 3$ $b = 2$ $c = 5$

$a^2 + b^3$

$(3)^2 + (2)^3$

$9 + 8$

17

$\frac{5ab}{c+1}$

$\frac{5(3)(2)}{5+1}$

$\frac{30}{6}$

5

$2c + 3(a+b)$

$2(5) + 3(3+2)$

$2(5) + 3(5)$

$10 + 3(5)$

$10 + 15$

25

A taxi charges $4.00 plus $3.00 for each mile. Write an algebraic expression that represents the cost of the trip for any number of miles.

Define a variable

m = # of miles

$4 + 3m$

or

$3m + 4$

LMS sold tickets for a school play. The price of an adult ticket was $6, the price of a student was $4. Write an algebraic expression that represents the total amount of money collected.

Define variable(s):

Let a = # adult tickets
S = # student

$a \cdot 6 + 5 \cdot 4$

$6a + 4s$

A company charges $63 per day to lease a car, plus $0.24 per mile driven. Write an expression for the cost to lease the car.

Define variable(s):

d = # of days
m = # of miles

$63d + 0.24m$

Sometimes, Always, or Never ???
Justify your reasoning.

The expressions $3x^2$ and $(3x)^2$ represent the same value.

Let $x = 4$

$3x^2 \stackrel{?}{=} (3x)^2$

$3(4)^2 \stackrel{?}{=} (3 \cdot 4)^2$

$3(16) \stackrel{?}{=} 12^2$

$48 \stackrel{?}{=} 144$

No

No In first case you are only squaring the value of x. In the second case you are squaring whatever 3 times x is