Variables and Expressions

1. For each of the following indicate if it is a *variable* or an *expression*.

a. s   **b.** 74t   **c.** K   **d.** x^2 **e.** xy   **f.** zz

2. Write an algebraic expression for each verbal expression.

a. the sum of p and 9

b. n divided by the sum of m and 10

c. the product of r, s, and t

d. a number x to the 7th power

e. the sum of 4T and T cubed

f. seven times y squared

g. a number s decreased by 10

h. y increased by twice x

i. a divided by the difference of a and 2.

j. five-sixths of the square of a number y

3. Write as expressions using exponents.

a. $x \cdot x \cdot x \cdot x$	**b.** $45 \cdot y \cdot y \cdot y \cdot 45$	**c.** $b \cdot b \cdot b \cdot b \cdot b \cdot a \cdot a$
d. (2m)(2m)(2m)	**e.** stststst	**f.** $5m \cdot 2m \cdot 3n$

4. Write a verbal expression for each algebraic expression.

a. m + 2n

b. $p^2 + 5$

c. 6xy

d. $2k^{12}$

e. $\dfrac{a + c}{4}$

f. $\dfrac{1}{x - 4}$

g. 40 − y

h. $40 - y^3$

Expressions in parentheses are considered as one quantity. You can read them using the word 'quantity'.	$3(x + y)$ "three times the quantity x plus y"

5. Write an algebraic expression for each verbal expression.

a. the product of the quantity x plus y and the quantity x minus y

b. the difference of 100 and b divided by the quantity 2b plus 10

c. the quotient of the quantity 5 minus T squared and T.

d. 8a reduced by the quantity b plus c.

e. n cubed increased by the quantity 6 minus n squared

f. two-thirds the quantity x squared minus y squared