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.** ststststst	**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. $\frac{a + c}{4}$

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

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