Sec. 1-1 Variables and Expressions

Write Mathematical Expressions: In the algebraic expression 4y, the letter y is called a variable. In algebra, variables are symbols used to represent unspecified numbers or values. Any letter may be used as a variable.

An algebraic expression consists of one or more numbers and variables along with one or more arithmetic operations.

$$4+\frac{x}{y}$$

$$m(5n)$$
 3ab

Different ways an algebraic expression can represent multiplication:

$$xy \qquad x \bullet y$$

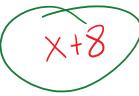
In each expression, the quantities being multiplied are called factors, and the result is called the product.

An expression like x^n is raised is called a power. The variable x is called the base, and n is called the exponent. The word power can also refer to the exponent. The exponent indicates the number of times the base is used as a factor.

H Exponent BASE

Ex: Write an algebraic expression for each verbal expression

a) eight more than a number



8+X

b) 7 less the product of 4 and a number x

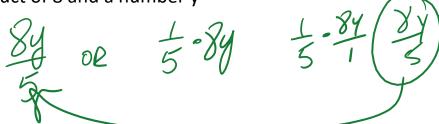


7 less than the product ~ U and a number x b) 7 less the product of 4 and a number x



of 4 and a number x

c) one fifth the product of 8 and a number y



d) the product of 7 and m to the sixth power less than nine.

$$9-7m^6$$

Try these:

1) 13 less than a number $\times -13$

2) 9 more than the quotient of b and 5

$$d5$$
 $\frac{b}{5}$ $+9$

(b:5)+9

3) three-fourths of the perimeter p $\frac{3}{4}$ P

4) n cubed divided by 2

To evaluate an expression means to find its value.

Evaluate:

a)
$$3^4$$

b)
$$4^{3}$$

$$c)$$
 7^{4}

$$d) 2^{7}$$

$$\cap$$
 I

64

2401

128

Another important skill is translating algebraic expressions into verbal expressions.

ex. Write a verbal expression for each algebraic expression.

a) $4x^{5}$

Fore times X to the Gifth power
The product of 4 and a number to the 5th power

b) $c^3 + 21d$

c) $y^3 - c^2d$ (use less than and product)

The product of a squared and d less than y collect

d) $x^4 - \frac{y}{9}$ (use quotient) and less than

X+o+he fourth power Minus the quotient of
the gentless of yand 9 less than x to the 4 regard of

Do p.8 # 1-11 in your group

Homework: Sec. 1-1 p.8 #14 - 44 evens

(38) product and less than (40) produ The product of 4 and m to the 5th pure less than 17

. Inf 2 and X

(40) product of 3 and x general less 2 times X less the product of 2 and x