

1-1

Study Guide and Intervention***Variables and Expressions***Work on this sheet is
OK. -- Mr. C.

Write Mathematical Expressions In the **algebraic expression**, ℓw , the letters ℓ and w are called **variables**. In algebra, a variable is used to represent unspecified numbers or values. Any letter can be used as a variable. The letters ℓ and w are used above because they are the first letters of the words *length* and *width*. In the expression ℓw , ℓ and w are called factors, and the result is called the **product**.

Example 1**Write an algebraic expression for each verbal expression.****a. four more than a number n** The words *more than* imply addition.four more than a number n

$$4 + n$$

The algebraic expression is $4 + n$.**b. the difference of a number squared and 8**The expression *difference of* implies subtraction.

the difference of a number squared and 8

$$n^2 - 8$$

The algebraic expression is $n^2 - 8$.**Example 2****Evaluate each expression.****a. 3^4**

$$3^4 = 3 \cdot 3 \cdot 3 \cdot 3 \quad \text{Use 3 as a factor 4 times.}$$

$$= 81 \quad \text{Multiply.}$$

b. five cubed*Cubed* means raised to the third power.

$$5^3 = 5 \cdot 5 \cdot 5 \quad \text{Use 5 as a factor 3 times.}$$

$$= 125 \quad \text{Multiply.}$$

Exercises**Write an algebraic expression for each verbal expression.****1.** a number decreased by 8**2.** a number divided by 8**3.** a number squared**4.** four times a number**5.** a number divided by 6**6.** a number multiplied by 37**7.** the sum of 9 and a number**8.** 3 less than 5 times a number**9.** twice the sum of 15 and a number**10.** one-half the square of b **11.** 7 more than the product of 6 and a number**12.** 30 increased by 3 times the square of a number**Evaluate each expression.**

13. 5^2

14. 3^3

15. 10^4

16. 12^2

17. 8^3

18. 2^8