Writing Algebraic Expressions

Objective:

Be able to write an algebraic expression for a word phrase or write a word phrase for an expression.

Although they are closely related, a Great Dane weighs about 40 times as much as a Chihuahua.

An expression for the weight of the Great Dane could be 40c, where c is the weight of the Chihuahua.

When solving real-world problems, you will need to translate words, or verbal expressions, into algebraic expressions.

Notes

- In order to translate a word phrase into an algebraic expression, we must first know some key word phrases for the basic operations.

Notes

- Multiplication expressions should be written in side-by-side form, with the number always in front of the variable.

- $3a$ $2t$ $1.5c$ $0.4f$

Notes

- Division expressions should be written using the fraction bar instead of the traditional division sign.

- $$\frac{c}{2} \qquad \frac{t}{5} \qquad \frac{3}{x}$$

Examples

- <u>Addition phrases</u>:
  - 3 more than *x*

  - the sum of 10 and a number *c*

  - a number *n* increased by 4.5

Examples

- <u>Subtraction phrases</u>:
  - a number *t* decreased by 4

  - the difference between 10 and a number *y*

  - 6 less than a number *z*

Examples

- <u>Multiplication phrases</u>:
  - the product of 3 and a number t

  - twice the number x

  - 4.2 times a number e

Examples

- <u>Division phrases</u>:
  - the quotient of 25 and a number *b*

  - the number *y* divided by 2

  - 2.5 divide *g*

Examples

- *converting f feet into inches*

- *a car travels at 75 mph for h hours*

- *the area of a rectangle with a length of 10 and a width of w*

Examples

- *converting i inches into feet*

- *the cost for tickets if you purchase 5 adult tickets at x dollars each*

- *the cost for tickets if you purchase 3 children's tickets at y dollars each*

Examples

- *the total cost for 5 adult tickets and 3 children's tickets using the dollar amounts from the previous two problems (problems e and f)*