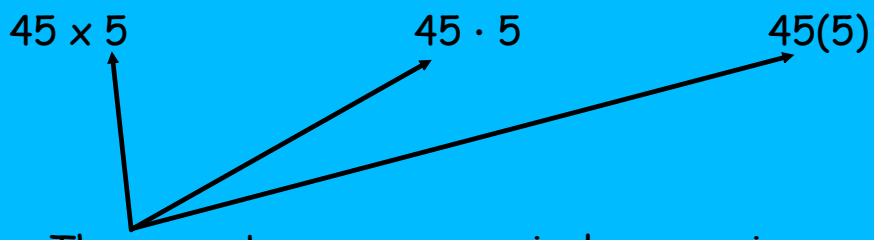
2.4 Write Multiplication Expressions

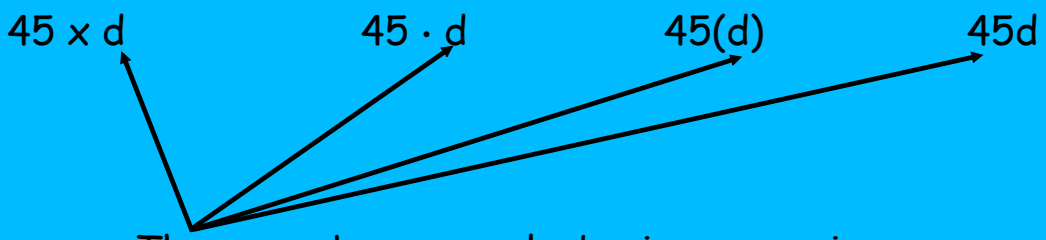
You can write multiplication expressions using different symbols:



These are known as numerical expressions.

Numerical expressions: a mathematical phrase containing only numbers and operations.

You can write an algebraic expression to represent an unknown part of the problem:



These are known as algebraic expressions.

Algebraic expressions: a mathematical phrase containing numbers, operations, and variables.

45 x d 45 · d 45(d) 45d

You can read each of these algebraic expressions in several ways:

45 times d 45 multiplied by d

the product of 45 and d 45 groups of d

Example: Write each word phase as a numerical expression.

1.) eight times four and two tenths

$8 \cdot 4.2$ or $8(4.2)$

2.) fifteen multiplied by one

$15 \cdot 1$ or $15(1)$

Example: Write each phase as an algebraic expression. (Use y as a variable.)

3.) a number multiplied by seven

$y \cdot 7$, $y(7)$, $7y$

4.) six multiplied by some number

$6 \cdot y$, $6(y)$, $6y$

Example: Write each expression as a word phrase.

5.) $45n$ 6.) $2.12g$ 7.) $24 \cdot 5.4x$

45 multiplied by n
45 times n
the product of 45 & n
45 groups of n

2.12 multiplied by g
2.12 times g
the product of 2.12 & g
2.12 groups of g

24 times 5.4 times x
24 multiplied by 5.4 times x
the product of 24 & 5.4x
24 groups of 5.4x

Example: Write each phrase as an algebraic expression.

8.) the product of three and six hundredths and some number

Let p be the number.

$3.6 \cdot p$ $3.6p$ $3.6(p)$

9.) 18 times a number

Let v be a number.

$18(v)$ $18 \cdot v$ $18v$

10.) the product of four and some number multiplied by 29

Let i be some number.

$4 \cdot i(29)$ $4i \cdot 29$
$4 \cdot i \cdot 29$ $4i(29)$

Example: **PROBLEM SOLVING**

11.) A farmer sells apples for $0.65 each. How much do g apples cost?

$0.65 \cdot g$ $0.65(g)$

$0.65g$

12.) Sela runs 2.5 miles each day for some number of days. What expression represents the total number of miles Sela runs?

Let p be the number of days

$2.5 \cdot p$ $2.5(p)$

$2.5p$