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UNIVERSITÉ MOULOUD MAMMERI DE TIZI-OUZOU

FACULTY OF SCIENCES  
DEPARTMENT OF MATHEMATICS

# Teaching Mathematics In English

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✓ **Relational operators**

**> : greater than**

**$\geq$  : greater than or equal to**

**< : less than**

**$\leq$  : less than or equal to**

**$\ll$  : much less than**

**$\gg$  : much greater than**

**$\cup$  : union**

**$\cap$  : intersection / intersect**

**Examples:**

**$4 > 3$  : four is greater than three**

**$x \geq z$  : x is greater than or equal to z**

**$3 < 4$  : three is less than four**

**$z \leq x$  : z is less than or equal to x**

**$0 < x < 1$  : x is greater than zero and less than 1**

**$A \cup B$  : A union B**

**$A \cap B$  : A intersect B**

**$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$  :**

**A intersect B union C is equal to A union B, intersect A union C *or***

**The intersection of A and B union C equals the intersection of A union B and A union C.**

✓ **Basic symbols**

$\in$  : belongs to/an element of / in

$\notin$  : does not belong to/ not an element of/ not in

$\subset$  : contained in; a proper subset of

$\subseteq$  : contained in; subset

$\supseteq$  : a superset

$\supset$  : a proper superset

**Examples:**

$x \in A$  :  $x$  belongs to  $A$ ;

$x$  is a member of  $A$ ;

$x$  is an element of  $A$

$x \notin A$  :  $x$  does not belong to  $A$ ;

$x$  is not a member of  $A$ ;

$x$  is not an element of  $A$

$A \subset B$ :  $A$  is contained in  $B$ ;

$A$  is a proper subset of  $B$

$A \subseteq B$ :  $A$  is contained in  $B$ ;

$A$  is a subset of  $B$

$\exists$  : there exists  
 $\nexists$  : there does not exist  
 $\forall$  : for all  
 $\perp$  : perpendicular to  
 $\parallel$  : parallel to  
 $\rightarrow$  : gives/ approaches  
 $\Rightarrow$  : implies/ imply  
 $\nRightarrow$  : does not imply  
 $\Leftrightarrow$  : equivalent to  
 $\nLeftrightarrow$  : not equivalent to

### Examples:

$\overline{AC} \perp \overline{AB}$  : The line segment AB is **perpendicular to** the line segment AC *or*  
The line segments AB and AC are perpendicular.

$A \Rightarrow B$  : A implies B

$A \Leftrightarrow B$  : A is equivalent to B

$A \nLeftrightarrow B$  : A is not equivalent to B

( : left parenthesis (Open parenthesis ) (Open bracket)  
) : right parenthesis (Close parenthesis ) (Close bracket)  
( ... ) : Open parenthesis ... close parenthesis or ... all in parenthesis  
[ ] : left and right square brackets  
{ } : curly brackets or braces  
< > : angle brackets  
[[ ]] : double brackets  
 $\infty$  : infinity  
% : percent  
|x| : absolute value of x, modulus x  
n! : n factorial; factorial n

**Examples:**

(x+y): Open parenthesis x plus y close parenthesis  
or x plus y all in parenthesis

## Exponent:

$b^n$  is called " **$b$  raised to the  $n$ th power**", " **$b$  (raised) to the power of  $n$** ", "**the  $n$ th power of  $b$** ", " **$b$  to the  $n$ th power**", or " **$b$  to the  $n$ th**"

base<sup>exponent</sup>=power

$x^2$ :  $x$  squared

$x^3$ :  $x$  cubed

$x^4$ :  $x$  to the fourth;  $x$  to the power of four

$x^n$ :  $x$  to the  $n$ ;  $x$  to the  $n$ th,  $x$  to the power of  $n$

$x^{-n}$ :  $x$  to the minus  $n$ ;  $x$  to the power of minus  $n$

## Examples:

$8^2$  : "8 to the second power", or "8 squared"

$4^5$  : four to the power of five or four to the fifth power

$5^{10}$  : five to the tenth power *or* five to the power of ten

$5 \times 10^5$  : five times ten to the fifth *or* five times ten to the fifth power

$6.634 \times 10^{15}$  : six point six three four times ten to the fifteenth

$\frac{x^2}{y^4}$  : x squared over y to the power of four

$\frac{x^3}{21}$  : x cubed over twenty-one