

## Entering Math Expressions in LON-CAPA

In general, you will enter math expressions in LON-CAPA like you would on most calculators. Use / for division, \* for multiplication and ^ for power. Here are some specific rules that I would like to point out.

1. **Always use \* for multiplication to be safe.** When a constant times a variable, \* can be omitted. For example, to express  $2x$ , you can type in either  $2x$  or  $2 * x$ . However, when two variables multiply each other, you must use \* in between them. For example, to express  $xy$ , you have to type in  $x * y$ . Thus, it is a good practice to always use \* for multiplication to be safe.
  
2. **Use and only use () when needed.** Never use [], <> or {}. For example, to express  $\frac{1}{2(x-1)+y}$ , you should enter  $1/(2 * (x - 1) + y)$ , not  $1/[2 * (x - 1) + y]$ .
  
3. **Always use () for the argument of a function.** For example, type  $\sin(x)$  instead of  $\sin x$ . Type  $\ln(x)$  instead of  $\ln x$ .

Below is a list of examples that you will find helpful.

What You Want to Express	What You Type in LON-CAPA	Notes
does not exist	DNE	all caps
infinity, $\infty$	INF	all caps
negative infinity, $-\infty$	-INF	all caps
undefined	UNDEFINED	all caps
$\pi$	pi	lower case
$\frac{2x}{y+1}$	$2x/(y + 1)$	
$x^y$	$x^(y)$	
$e^x$	$e^(x)$	
$\sqrt{x}$	$\text{sqrt}(x)$ or $x^(1/2)$	
$\sqrt[3]{x}$	$x^(1/3)$	
$x^{\frac{2}{5}}$	$x^(2/5)$	
$\sin x$	$\sin(x)$	
$\tan^2 x$	$(\tan(x))^2$	
$\ln x$	$\ln(x)$	