

# Basic Algebra 1

We know when students are just beginning their study of algebra, the basic concepts can be difficult to grasp. These activities are written for teachers to use in their basic algebra classes.

When you find other helpful exercises, add these to your own eActivities.

Good exercises encourage students!

This file includes eActivities on:

- 1 **Negative Numbers** - Simplify expressions with negative numbers.
- 2 **Absolute Value** - Find the absolute value using Verify.
- 3 **Absolute Graph** - Move the graph or change the equation and watch what happens.
- 4 **Factorial (!)** - Explore factorials with the help of Verify.
- 5 **Order of Calculation** - Observe the importance of the order of calculation using Verify.

## 1 Negative Numbers

Simplify expressions with negative numbers.

The screenshot shows a software window titled "Negative Numbers" with a menu bar (File, Edit, Insert, Action) and a toolbar. The main content area contains an example section with the following text:  
<Example>  
 $2 \times (-3) = -6$   
 $2 - (-3) = 5$   
Below this is a "Calculator" input field with a checkmark icon. The "Try your exercise" section contains:  
 $(-3) - 3 = ?$   
 $-3 - (-3) = ?$   
 $3 \times (-3) = ?$   
 $(-3) \times (-3) = ?$   
Another "Calculator" input field with a checkmark icon is below. At the bottom, a status bar shows "Alg Standard Cplx Rad" and a calculator icon.

## 2 Absolute Value

Find the absolute value using Verify.

The first screenshot shows a software window titled "Absolute value" with a menu bar (File, Edit, Insert, Action) and a toolbar. The main content area contains an example section with the following text:  
<Example>  
 $|-3| + |-2|$   
 $= 3 + 2$   
 $= 5$   
The "Try your own" section contains:  
 $\frac{-3}{-8} = ?$   
Below this is an input field "Ex-1" with a "f(x)=" label. Another example is shown:  
 $\frac{|-3|}{|8|} = ?$   
Below this is an input field "Ex-2" with a "f(x)=" label. At the bottom, a status bar shows "Alg Standard Cplx Rad" and a calculator icon.

The second screenshot shows a software window titled "File Edit Action" with a menu bar (File, Edit, Action) and a toolbar. The main content area contains an example section with the following text:  
 $|-3| + |-2|$   
 $= 3 + 2$   
 $= 5$   
The "Try your own" section contains:  
 $\frac{-3}{-8} = ?$   
Below this is an input field "Ex-1" with a "f(x)=" label. Another example is shown:  
 $\frac{-3}{-8}$   
 $= 0$   
At the bottom, a status bar shows "Eq: abs(((-3)/(-8)))" and a calculator icon.

### 3 Absolute Graph

Move the graph or change the equation and watch what happens.

Graph  $y=m|x-a|+b$

Tap ----->

Change the equation below  
or move the curve on the  
geometry window.

$y=|x|$

Alg Standard Cplx Rad

### 4 Factorial

Explore factorials using Verify.

**Factorial**

<Example>  
7!  
=7·6·5·4·3·2·1  
=42·20·6  
=840·6  
=5040

$\frac{9!}{7!}$   
=  $\frac{9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$   
=9·8  
=72

**Try your own.**

Alg Standard Cplx Rad

**Try your own.**  
8! =?  
Ex-1  f(x)=

$\frac{13!}{9!}$  =?  
Ex-2  f(x)=

8!  
=0

Alg Standard Cplx Rad

### 5 Order of Calculation

Observe the importance of the order of calculation using Verify.

**Order of Calculation**

<Example-1>  
 $2+3 \cdot \frac{6}{3}$   
=2+6  
=8

<Example-2>  
 $2+7(2-3)$   
=2+7·2+7·(-3)  
=2+14-21  
=16-21  
=-5

**Try these exercises.**  
 $2-3 \cdot \frac{3}{2}$  =?

Alg Standard Cplx Rad

**Try these exercises.**  
 $2-3 \cdot \frac{3}{6}$  =?  
Ex-1  f(x)=

$2 \cdot 7 - (2+3)$  =?  
Ex-2  f(x)=

$2-3 \cdot \frac{3}{6}$   
=0

Alg Standard Cplx Rad