

Resources for math tutors

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All of the resources listed in this handout are free to use. They do not require you to sign up for an account, or to log in with any kind of access code, however some of these sites do offer the option of creating an account so the student may track his or her progress.

Baldwinsville School District Curriculum Standards: A menu of documents regarding curricula for the Baldwinsville Central School District

<http://www.bville.org/teacherpage.cfm?teacher=4170>

Graphing Calculator by Desmos: A free online graphing calculator that works in your web browser. Enter the equation for the line you want to graph into the box at the left of the screen. Create an additional line by clicking the next number just below that box.

<https://www.desmos.com/calculator>

Khan Academy Math: Scroll down through the grade levels, then work your way through the sub-menu pages to access the modules you need. This one can be a bit tricky to navigate just because it's so huge and has so many modules. I strongly recommend you practice with navigating the site before using it with a student.

<https://www.khanacademy.org/math>

OpenOffice Calc: The OpenOffice Office suite is free software that includes a mathematics editor that you can use to create worksheets and tests. The program uses a simple code for programming mathematical symbols that's very easy to learn. The first link below is to the OpenOffice Downloads Page, and the second link is to the OpenOffice Calc Users Manual.

- **Downloads page**
<http://www.openoffice.org/download/index.html>
- **User Manual** (Scroll down to where it says "Calc" chapters and don't worry about the fact that it says v3.3).
https://wiki.openoffice.org/wiki/Documentation/OOo3_User_Guides/OOo3.3_User_Guide_Chapters

Printable Graph Paper:

- <https://mathbits.com/MathBits/StudentResources/GraphPaper/full%20page.pdf>

Algebraic properties

Property	Addition	Multiplication
Associative	$(a + b) + c = a + (b + c)$	$(ab)c = a(bc)$
Commutative	$a + b = b + a$	$ab = ba$
Identity	$a + 0 = 0 + a$	$a \cdot 1 = 1 \cdot a = a$
Inverse	$a + (-a) = 0 = (-a) + a$	$a \cdot (\frac{1}{a}) = 1 = (\frac{1}{a}) \cdot a, \text{ if } a \neq 0$
Distributive	$a(b + c) = ab + ac$	$ab + ac = a(b + c)$

Properties of Equality and Inequality

Property	Equality	Inequality
Multiplicative Property of Zero	$a \cdot 0 = 0 = 0 \cdot a$	
Zero product	<i>If $ab = 0$, then $a = 0$ or $b = 0$</i>	
Reflexive	$a = a$	
Symmetric	<i>if $a = b$, then $b = a$</i>	
Transitive	<i>if $a = b$ and $b = c$ then $a = c$</i>	
Addition	<i>if $a = b$ then $a + c = b + c$</i>	<i>if $a > b$ and $b > c$, then $a > c$ if $a < b$ and $b < c$, then $a < c$</i>
Subtraction	<i>if $a = b$, then $a - c = b - c$</i>	<i>if $a < b$, then $a + c < b + c$ if $a > b$, then $a + c > b + c$</i>
Multiplication	<i>if $a = b$, then $ac = bc$</i>	<i>if $a < b$ and $c > 0$, then $ac < bc$ if $a < b$ and $c < 0$, then $ac > bc$ if $a > b$ and $c > 0$, then $ac > bc$ if $a > b$ and $c < 0$, then $ac < bc$</i>
Division	<i>if $a = b \wedge c \neq 0$, then $(\frac{a}{c}) = (\frac{b}{c})$</i>	<i>if $a < b \wedge c > 0$, then $(\frac{a}{c}) < (\frac{b}{c})$ if $a < b \wedge c < 0$, then $(\frac{a}{c}) > (\frac{b}{c})$ if $a > b \wedge c > 0$, then $(\frac{a}{c}) > (\frac{b}{c})$ if $a > b \wedge c < 0$, then $(\frac{a}{c}) < (\frac{b}{c})$</i>