Ideas for Teaching Math to Blind Students

1. Tactile learning aids (source American Printing House for the Blind www.APH.org)
2. Jumbo Braille (to address sensitivity issue)
3. One-on-one tutoring (use a combination reader/math tutor)
4. Using software to write math
5. Taking the course over 2 semesters
6. Magnet boards/manipulatives (cubes, Legos, flexible magnetic sheets, magnetic string)
7. Create a standardized key for both symbols (cut out magnet sheets or Braille) and the names of those symbols for reference by readers
8. Math symbols translated into words that can be read by JAWS
9. Talking calculator that reads what you punch in as well as the calculation result (from APH and MaxiAids)
10. Auditory graphing calculator for computer (www.viewplus.com)
12. abacus (http://www.hadley-school.org/resources_list_detail.asp?resource=abacus)
13. Create MathML Web pages and read with MathPlayer (http://www.dessci.com/en/products/mathplayer/)

For Braille users

1. Braille texts in either Nemeth or DotsPlus
2. Use Scientific Notebook and Duxbury with a Braille embosser to do handouts, tests, etc.
3. To create a Braille number line, see the following site: http://www.tsbvi.edu/math/standard-num-lines.htm

For tactile graphics

1. Raised line drawing kit (www.maxiaids.com)
2. PIAF (Pictures in a Flash—www.optelec.com)
3. TIGER embosser (www.viewplus.com)
4. Talking tactiles with Iveo

Computer programs

1. Virtual Pencil (http://www.hentermath.com/)
2. WinTriangle (http://www.wintriangle.org/)
3. Duxbury (http://www.duxburysystems.com/) with Scientific Notebook (http://www.mackichan.com/) to create Nemeth
4. Dragon NaturallySpeaking (http://www.nuance.com/naturallyspeaking/) with MathTalk (http://www.metroplexvoice.com/) and Scientific Notebook

For low vision student who can only see white on black:

Online math program
1. Open the math program to the individual problem and hitting "print Screen."
2. Copy the image into Image Composer and crop to the problem.
3. Take this cropped image into "Paint." In paint, we then invert the colors.
4. Take the inverted color image and put it into a Word document.

Web sites

Programmable calculator on the computer that is accessible
http://userwww.sfsu.edu/~meredith/X(PLORE)/xplorepg.html

Graphical Calculus Course Resources
http://www.rit.edu/~easi/itd/itdv01n4/article3.html
http://163.238.35.147/CalculusForTheBlind/index.html
http://www.math.temple.edu/~cow/

Info on Nemeth
http://www.tsbvi.edu/math/math-resources.htm

Calculators
http://www.seeingwithsound.com/winmath.htm
http://www.viewplustech.com/agc_features.html
http://sun1.aph.org/products/orion.htm
www.maxiaids.com

General Web sites
http://www.tsbvi.edu/math/
http://www.rit.edu/~easi/easisem/talkmath.htm
http://www.ohiou.edu/ohiotoday/fall99/features/feature2/a_plus.html
http://www.nfb.org/bm/bm00/bm0006/bm000603.htm
http://www.jsrd.or.jp/dinf_us/csun_99/session0113.html
http://www.viewplustech.com/BlindUsers.html
http://www.rit.edu/~easi/math.htm
http://www.seeingwithsound.com/winmath.htm
http://www.cmu.edu/oli/courses/enter_calculus.html

MathTrax
http://prime.jsc.nasa.gov/mathtrax/