Algebraic Connections
Pretest

Use your own paper, or the computer, to report the answers to the questions. Make sure you use the problem numbers, show all work, document your solutions, and include the answer to the question!

1. During this pretest, use one of the following technologies, in an effective attempt to solve one or more of the questions below. Use eMail, Graph Link, Excel, Word, and/or Graphical Analysis. Report the following information with your use: a) what problem you were solving, b) which of the technologies was used, and c) why you think this was an effective use of the technology to solve the problem(s).

2. For the following Absolute Value function, identify and report the following information:
a) Maximum or Minimum point;
b) X-Intercept(s);
c) Y-Intercept; and
d) Slope of the left and right sides.

$$y = -2\,|\,3\,(\,x - 4\,)\,|\, - 11$$

3. Using the AlgConn Syllabus, calculate Hopo's grade for the Semester if their score on the final is 55%.

Item	1st 9 weeks	2nd 9 weeks
OverArching Process	3	2
7 Parts of Algebra	2	3
Testing	1	4
Technology	3	1
Growth	4	0
Free	0	2
Journal	3	4

4. Using the data in the table below, which is height in millimeters, to identify the following values:

1000	770	592	457	352	271	208	160	124	95	73	56	43	33

n **mean** **Median** **mode** **average** **maximum** **minimum**

5. Using the data in the table in question #4 convert the values to meters and make a XYLine plot using the times in seconds (from the table below for X and the converted distances in meters as Y.

6. Find the average ratios of the heights from the table in question #4, as a percent.

7. Given the following data, write a Quadratic that fits the curve. Use the $y = A\,(\,x - H\,)^2 + K$ model.

x	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50
y	0.88	2.50	3.88	5.00	5.88	6.50	6.88	7.00	6.88	6.50	5.88	5.00	3.88	2.50

8. Complete the Table placing your answers on your own paper where the * appears.

X	Y	Rule
*	7	$Y = 3* \mid 4X - 11 \mid + 7$
-11.4	2.5	*
10	*	$Y = 4X^2 - 2X + 7$
*	3	$Y < 4X - 7$
14	*	$2Y + 5 = 3X - 7$
*	83.36895	$Y = 400 \, (\, 0.77)^X$

9. Complete the Multiplication indicated below and write out the algebraic expression that results.

*	$	b
b		
$		
Ñ		

10. Using the following methods, solve each problem, using one method. Use one method per problem with no repeats:

The 8 Methods are Guess and Test, The Algebra Way, Graph, Table, Solver, Logic, Guess, and Zeros or Roots. See http://fasst.fayar.net for more information.

a) Linear: **1/2 x - 5/2 = 10**
b) Quadratic**: $x^2 + 2x - 3 = 0$**
c) Absolute Value: **$\mid 3 \, (x - 7) \mid + 11 = 20$**
d) Exponential: **$150 * (\, 0.85)^x = 127.5$**