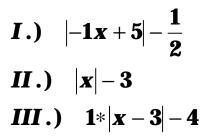
## Examination IV Algebra 1

Please produce your answers on your own paper, detailing your solutions and documenting your work. Include the problem number and your information (Big 4) on each sheet/email. You may use any notes or assignments as reference on this examination.

- 1. Somewhere in this test, produce a PIC and a GDB that seems appropriate as part of your solution. Email me these files as attachments, explaining why you value them as part of your solution.
- For the following Absolute Value functions, identify and report the following:
  a) Maximum or Minimum point;
  - b) X-Intercept(s);
  - c) Y-Intercept; and
  - d) Slope of the left and right sides.



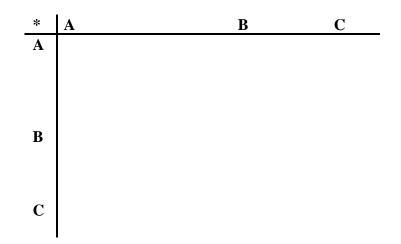
- 3. Given the following information, give the Absolute Value expression, and a graph of the full function:
  - a) Minimum point = (**3,-2**)
  - b) X-Intercepts = 2 and 4
  - c) Y-Intercept =  $\mathbf{4}$
  - d) Slope of the left and right sides: Slope Right = 2, Slope Left = -2
- 4. Collect the Ball Bounce information using the RANGER program and CBR with the provided ball. Answer the following questions (Detail how you got your answers.):a) Convert the values for height to centimeters.
  - b) Give the initial height that you dropped the ball from, and the name of the ball.
  - c) What is the Average Ratio of the Bounces as a percent?
  - d) Select one of the Bounces and identify the Quadratic that fits it best.
  - e) Express your level of belief that this is the best fit.
  - f) Give the Quadratic from part d in the  $Ax^2+Bx+C$  form.
  - g) Give the Quadratic from part d in the  $A(x-H)^2+K$  form.
- 5. Using the Squares, Strips and Singles as seen with the Algebra Tiles, Make a Rectangle using the indicated numbers and then write the algebraic statement showing the Product (polynomial) and the factors.

a) 4, 7, -2 b) 9, -30, 25 c) 3, 24, 48

6. Complete the table below (on your own paper).

(X+a) (X+b)	X <sup>2</sup> +aX+bX+ab	$X^2+(a+b)X+ab$
(X+9)(X+1)	#	#
#	$X^{2}$ -5X-6X+30	#
#	#	$X^{2}-X-12$

- 7. Use at least 4 of the 8 ways in the solution of these problems. Document the results and state the method used.
  - A)  $X^2 11X + 24 = 0$ B)  $2X^2 + 3X = 5$ C)  $-18 = -18X - 8X^2$ D)  $4X^2 = 7X + 2$ E)  $3X^2 - 15 = -21$
- 8. Do the following multiplication on your own paper, and give the algebraic expression that goes with the answer.



- 9. What is "Portfolio Purging" and how and why does one do it?
- 10. Compare and Contrast Rectangles and Squares.