

MATH 301 – Quiz 1

You may work with other class members on this quiz, but you may *not* receive assistance from people not in MATH 301. You must show all of your work to receive full credit. Do all your work on other sheets of paper and be sure to staple all the pieces of paper together or YOU WILL GET A ‘ZERO’ ON THE QUIZ. Do not use decimal approximations unless asked to do so. Your work on this quiz must be handed in by Monday, 27 January 2003 at 1:40 p.m. GOOD LUCK!

- 1) Find all solutions of the linear system

$$\begin{cases} -5x_2 - 3x_3 = -2 \\ x_1 + 2x_2 + 3x_3 = 1 \\ 2x_1 - x_2 + 3x_3 = 0 \end{cases}$$

- 2) Admission to a play is \$7 for adults (who are not senior citizens), \$3 for senior citizens, and \$2 for children. If the total amount paid is \$295 and 61 people attended, determine all possibilities for the number of adults, seniors, and children.

- 3) Consider the points $(-2, -11)$, $(-1, -6)$, and $(1, -2)$.

- a) Find the parabola of the form

$$y = ax^2 + bx + c$$

that contains these three points.

- b) Find the parabola of the form

$$x = ay^2 + by + c$$

that contains these three points.

Note: This quiz is highly computational in nature. You are therefore encouraged to use Matlab. If you do, either hand in a paper copy of your Matlab session(s) or write down on your paper each step for which you used Matlab. If you use Matlab, you are encouraged to use the `format rat` statement. And you may not use the `rref` command in what you hand in (for obvious reasons).