

Math 218D

Quiz 2

1. Determine the shape (point/line/plane/space) of the following span:

$$\text{Span} \left\{ \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix}, \begin{pmatrix} 2 \\ 4 \\ 2 \end{pmatrix}, \begin{pmatrix} 1 \\ 0 \\ 1 \end{pmatrix} \right\}.$$

2. For the following augmented matrices:

a) $M_1 = \left(\begin{array}{cc|c} 1 & 0 & 3 \\ 0 & 0 & 0 \end{array} \right),$

b) $M_2 = \left(\begin{array}{ccc|c} 1 & 5 & 0 & 2 \\ 0 & 0 & 1 & 7 \end{array} \right)$

answer the following questions:

- (1) write the solution set of each system in the parametric form;
- (2) rewrite each solution set in parametric vector form;
- (3) write the dimension of the solution set for each system.