
DIMENSION WORKSHEET

OCTOBER 16, 2017

(1) Find the dimension of the following subspace of \mathbb{R}^3 .

$$W = \left\{ \begin{pmatrix} a + 3b \\ 2a + b + 5c \\ b - c \end{pmatrix} \in \mathbb{R}^3 : a, b, c \in \mathbb{R} \right\}$$

(2) Find the dimension of the following subspace of \mathbb{R}^3 .

$$W = \left\{ \begin{bmatrix} x \\ y \\ z \end{bmatrix} \in \mathbb{R}^3 : \begin{array}{l} x + y = 0 \\ y + z = 0 \\ x - z = 0 \end{array} \right\}.$$