QUIZ October 18, 2013

1. The following is true in a vector space:

$$c(d\mathbf{u}) = (cd)\mathbf{u}$$

   where c and d are scalars and $\mathbf{u}$ is a vector.

2. $\mathbb{R}^2$ is a subspace of $\mathbb{R}^3$.

3. The set of vectors of the form

$$\begin{bmatrix} a - 2b \\ b \end{bmatrix}$$

   is a subspace of $\mathbb{R}^2$

4. The set of constant polynomials is a subspace
   of $\mathbb{P}_3$, the vector space of polynomials of degree
   at most 3.

1