

**MATH 4242 Quiz 3**

Name: \_\_\_\_\_  
Student Id: \_\_\_\_\_

Consider the map  $T : \mathbb{R}^3 \rightarrow \mathbb{R}$  defined by  $T(x, y, z) = x + y + z$ .

(1) Is  $T$  linear? If so, what is  $\mathcal{M}(T)$ ? [6pts]

(2) Describe the kernel of  $T$ . [4pts]

(3) What's the dimension of  $\text{Img}(T)$ ? [2pts, extra credit]