Math 2550

HW 0

Set Theory Notation

1. Let $S = \left\{ 5, 3, 10, \dfrac{1}{2}, \pi \right\}$. Are the following statements True or False?

   (a) $10 \in S$

   (b) $\dfrac{3}{2} \in S$

   (c) $3 \notin S$

2. Let $A = \{1, 2, 3, -10, -1, -2\}$. List the elements of the set

$$S = \{t^2 \mid t \in A\}$$

3. List all of the elements of the set

$$S = \{\, t \mid t^2 + t - 1 = 0 \text{ where } t \text{ is a real number } \}$$

4. Describe the set

$$S = \{\, t^2 + 1 \mid -1 \le t < 2 \text{ where } t \in \mathbb{R}\}$$