

Math 270 - Basic Discrete Mathematics
Practice Quiz on Section 5.9

Directions: Answer the problems given below.

1. Define a set S of integers recursively as follows:

I. Base: $0 \in S$.

II. Recursion: if $k \in S$, then

II(a) $k + 4 \in S$

II(b) $k - 4 \in S$

III. Restriction: Nothing is in S other than objects defined in I, II above.

Use structural induction to prove that every integer $n \in S$ is divisible by 4.