



INTRO TO ABSTRACT MATH
FALL 2009

HOMWORK 10
DUE SEPTEMBER 28

Exercise 28. Let $A = \{n^2 + n + 1 \mid n \in \mathbb{N}\}$ and $B = \{2n + 1 \mid n \in \mathbb{N}\}$. Prove that $A \subseteq B$.

Exercise 29. Are the sets $\{n^3 + n \mid n \in \mathbb{N}\}$ and $\{n^2 - 2n - 1 \mid n \in \mathbb{N}\}$ disjoint? Be sure to justify your answer.

Exercise 30. What does the following Venn diagram seem to say about $(A \cap C) - B$? Is this statement always true? Either prove it or find a counterexample.

