

Due at the start of class Tuesday, October 25, 2005.

Problem 1. Do Exercise 3.13 (page 112) in Kinber and Smith.

Problem 2. Do Exercise 3.37 (page 116) in Kinber and Smith.

Problem 3. Show that the following languages are not context free.

a.

$$\{a^p \mid p \text{ is a prime number}\}$$

b.

$$\{a^{n^2} \mid n \geq 0\}$$

c.

$$\{www \mid w \in \{a, b\}^*\}$$

d.

$$\{w \in \{a, b, c\}^* \mid w \text{ has the same number of } a\text{'s, } b\text{'s, and } c\text{'s}\}$$

e.

$$\{w \in \{a, b, c\}^* \mid w \text{ has more } a\text{'s than } b\text{'s and more } b\text{'s than } c\text{'s}\}$$