

CMPU-102 – Data Structures and Algorithms
Spring 2008
Wed/Thu, Jan. 30/31

Recursion Exercises

1. You did such a terrific job organizing last year's parade that you've been asked to do it again. This year's parade will consist of bands, floats, and a new type of entry—equestrian groups. We have some additional restrictions to consider:

- No band can follow another band (same as before)
- no band can follow an equestrian group (it might spook the horses), and
- no equestrian group can follow another equestrian group (horses might not all get along with each other)

How many ways can you organize a parade of length n ?

Use $P(n)$, $F(n)$, $B(n)$, and $E(n)$ in a similar manner as the example given in the book. So,

$$P(n) = F(n) + B(n) + E(n)$$

Solve in terms of $P(n)$ and determine the base cases.

