In-class, Week 7, day 2

Section 5.5, Problem 12: This program computes quotients and remainders. Verify that it is partially correct with respect to the initial assertion "a and d are positive integers" and the final assertion "q and r are integers such that $a = dq + r$ and $0 \leq r < d$.

> $r := a$
> $q := 0$
> **while** $r \geq d$
> $r := r - d$
> $q := q + 1$

Section 6.1, Problem 32: How many strings of eight uppercase English letters (26) are there

a) if letters can be repeated?

b) if no letter can be repeated?

c) that start with X, if letters can be repeated?

d) that start with X, if no letter can be repeated?

e) that start and end with X, if letters can be repeated?

f) that start with the letters BO, in that order, if letters can be repeated?

g) that start and end with the letters BO, in that order, if letters can be repeated?

h) that start or end with the letters BO, in that order, if letters can be repeated?

Section 6.1, Problem 44: How many ways are there to seat four of a group of ten people around a circular table where two seatings are considered the same when everyone has the same immediate left and immediate right neighbor?