

GP211. Closed book. 5 minutes. October 12, 2009. Your name _____

1. Given

$$X(Z) = x_0 + x_1 Z + x_2 Z^2 + x_3 Z^3 + x_4 Z^4 \dots$$

$$Y(Z) = y_0 + y_1 Z + y_2 Z^2 + y_3 Z^3 + y_4 Z^4 \dots$$

The coefficient of Z^2 in the product $Y(Z) = (1 + 2Z)X(Z)$ is $y_2 = x_2 + 2x_1$. What is the coefficient of Z^k in the product $Y(Z) = (1 + Z/5)X(Z)$?

2. Given $Y(Z)$ above, what recursion enables you to find the coefficients x_t of the polynomial $X(Z)$.