

Problem 1.

(a) Yes, the system will be stable since the magnitudes of the PARCORs are all less than 1.

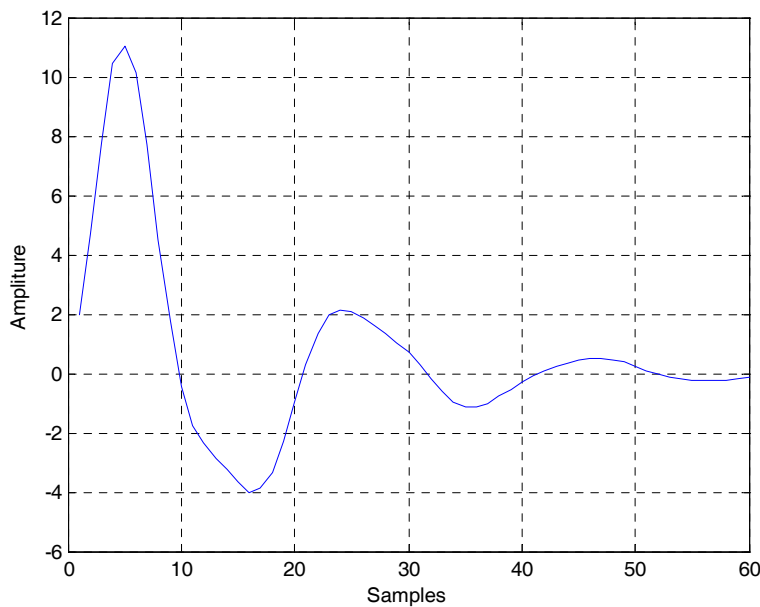
(b)
$$E^{(8)} = \prod_{i=1}^8 (1 - p_i^2) = 0.0064$$

(c) The PARCORS apparently have the wrong signs, so switching the signs, we get

The transfer function for the LPC synthesis filter

$$\frac{1}{A(z)} = \frac{1}{1 - 2.353z^{-1} + 1.661z^{-2} - 0.004z^{-3} + 0.323z^{-4} - 1.484z^{-5} + 1.157z^{-6} - 0.189z^{-7} - 0.059z^{-8}}$$

Impulse response:



Problem 2. The impulse response is on the next page.

