

In the Name of God, the Merciful, the Compassionate

**Signals and Systems – CE Department – Sharif University of Technology
Fall 2007 – Homework on Laplace and Z Transform**

Chapter 9 and 10
Due : Final Exam Day

1) Solve following questions from the book

Chapter 9 :

- 9.21 : b, e, f, h
- 9.22 : d, e, f, g
- 9.23
- 9.38
- 9.44
- 9.45
- 9.51

Chapter 10 :

- 10.15
- 10.17
- 10.18
- 10.22 : c, d
- 10.26
- 10.31
- 10.37
- 10.48

2)

An LTI system is said to be minimum phase if and only if it is causal and stable and its inverse is also causal and stable.

- a) If the transfer function of an LTI system is rational, and the system is minimum phase, what can be said about poles and zeros of this system?
- b) Consider a system with one zero at $z = 0$ and two poles at $z = 0.5 + 0.5j$ and $z = 0.5 - 0.5j$. Determine whether it is a minimum phase system.