

Homework 4

1) A combinational circuit is defined by the following three Boolean functions.

$$F1 = (X + Z)' + XYZ$$

$$F2 = (X + Z)' + X'YZ$$

$$F3 = XY'Z + (X + Z)'$$

Design the circuit with a single decoder and external OR gates.

2) Implement a binary Full Adder with a single 4-to-1 2-line multiplexer and a single inverter. (if you do not know what a Full Adder is please see the truth table of a Full Adder in the lecture slides).