

ISTM 214 Homework 1

Due day: 9/20

1. (24%) Perform the following number-system conversions
 - (a) $(4310)_5 = (?)_{10} = (?)_2$
 - (b) $(10110.0101)_2 = (?)_{10} = (?)_8$
 - (c) $(125)_{10} = (?)_2 = (?)_{16}$
 - (d) $(255.55)_{10} = (?)_2 = (?)_8$
2. (16%) Determine the base of the numbers in each case for the following operations to be correct:
 - (a) $41 / 3 = 13$
 - (b) $23 + 44 + 14 + 32 = 223$
3. (20%) Simplify the following Boolean expressions to a minimum number of literals:
 - (a) $(x + y)'(x' + y')$
 - (b) $w'x(z' + y'z) + x(w + w'yz)$
4. (20%) List the truth table of the function:
 - (a) $F = xy + xy' + y'z$
 - (b) $F = ac + b'c'$
5. (20%) Draw logic diagrams of the circuits that implement the functions in Problem 4.