

Homework #01

Show your work for all problems given below.

1. Convert the following unsigned binary magnitude numbers to decimal.

(a) 10110111

(b) 11101011

(c) 10000101

2. Convert the following decimal counting numbers to binary utilizing a register size of 12 bits.

(a) 356

(b) 107

(c) 218

3. Convert the following positive decimal fractions to signed binary utilizing an 8-bit register with an assumed radix point such that 2 bits are to the left of the radix point and 6 bits are to the right, *e.g.*, sb.bbbbbb. All bits must be filled in with either a one or a zero.

(a) +0.45

(b) +0.75

(b) +0.9

4. Convert the following fixed-point decimal numbers to binary utilizing a 16-bit register with an assumed radix point such that 12 bits are to the left of the radix point and 4 bits are to the right, *e.g.*, sbbbbbbbbbbb.bbbb. All bits must be filled in with either a one or a zero.

(a) +227.1

(b) +1408.55