Assignment 1

1. Convert the decimal number 250.5 to base 3, base 4, base 7, and base 8, base 16

- $(250.5)_{10} = 100021.111111_3$
  $250/3 = 83 \; ; a_0 = 1$
  $83/3 = 27 \; ; a_1 = 2$
  $27/3 = 9 \; ; a_2 = 0$
  $9/3 = 3 \; ; a_3 = 0$
  $3/3 = 1 \; ; a_4 = 0$
  $1/3 = 0 \; ; a_5 = 1$

  $0.5 \times 3 = 1.5 \; ; a_0 = 1$
  $0.5 \times 3 = 1.5 \; ; a_1 = 1$
  $0.5 \times 3 = 1.5 \; ; a_2 = 1$

- $(250.5)_{10} = (3322.2)_3$
  $250/4 = 62 \; ; a_0 = 2$
  $62/4 = 15 \; ; a_1 = 2$
  $15/4 = 3 \; ; a_2 = 3$
  $3/4 = 0 \; ; a_3 = 3$

  $0.5 \times 4 = 2.0 \; ; a_0 = 2$

- $(250.5)_{10} = (505.33333)_7$
  $250/7 = 35 \; ; a_0 = 5$
  $35/7 = 5 \; ; a_1 = 0$
  $5/7 = 0 \; ; a_2 = 5$

  $0.5 \times 7 = 3.5 \; ; a_0 = 3$
  $0.5 \times 7 = 3.5 \; ; a_1 = 3$
  $0.5 \times 7 = 3.5 \; ; a_2 = 3$

- $(250.5)_{10} = (372.4)_8$
  $250/8 = 31 \; ; a_0 = 2$
  $31/8 = 3 \; ; a_1 = 7$
  $3/8 = 0 \; ; a_2 = 3$

  $0.5 \times 8 = 4.0 \; ; a_0 = 4$