Exercises: Number Bases 1

Exercises

1. Convert the following numbers to binary and to hexadecimal:
   (a) 57_{10}
   (b) 353_{10}
2. Convert the following numbers to binary and to denary:
   (a) $5D_{16}$
   (b) $1A3_{16}$
3. Do the following additions:
   (a) $10110_2 + 111100111_2$
   (b) $1C_{16} + 239_{16}$
   (c) $A79_{16} + 8F_{16}$
4. Perform the indicated calculations on the following binary numbers:
   (a) $11010 + 1110$
   (b) $111.0101 + 10.0111$
   (c) $1100110 + 11010$
   (d) $11001.11 - 1011.1$
   (e) $1011 - 100110$
   (f) $0.1101 - 0.1110$

Solutions

1. Convert the following numbers to binary and to hexadecimal:
   (a) $57_{10} = 11\,1001_2 = 39_{16}$
   (b) $353_{10} = 1\,0110\,0001_2 = 161_{16}$
2. Convert the following numbers to binary and to denary:
   (a) $5D_{16} = 0101\,1101_2 = 93_{10}$
   (b) $1A3_{16} = 0001\,1010\,0011_2 = 419_{10}$

3. Do the following additions:

   (a) $10110_2 + 111100111_2 = 1010\,1010_2$

   (b) $1C_{16} + 239_{16} = 255_{16}$

   (c) $A79_{16} + 8F_{16} = B08_{16}$

4. Perform the indicated calculations on the following binary numbers:

   (a) $11010 + 1110 = 0101000$

   (b) $111.0101 + 10.0111 = 1001.1100$

   (c) $1100110 + 11010 = 10000000$

   (d) $11001.11 - 1011.1 = 100101.01$

   (e) $1011 - 100110 = -011011$

   (f) $0.1101 - 0.1110 = -0.0001$