

CSSE 132 – Introduction to Computer Systems
Rose-Hulman Institute of Technology

Homework 1

Write your answers on a **separate sheet of paper**.

1. (12 points) Convert the following unsigned decimal numbers to their 16-bit unsigned binary and hexadecimal representations. You **must show your work** in the dec-to-bin (or dec-to-hex) conversion to earn full credit. You may use a calculator to confirm your answers.
 - (a) 65533
 - (b) 256
 - (c) 255
 - (d) 43690
2. (12 points) Convert the following unsigned 16-bit binary numbers to their decimal *and* hexadecimal representations. You **must show your work** while converting to decimal to earn full credit. You may use a calculator to confirm your answers.
 - (a) 0010 0111 1001 0000
 - (b) 0001 1111 1111 1111
 - (c) 1000 0000 0000 0000
 - (d) 0000 0000 0000 0111
3. (12 points) convert the following unsigned 16-bit hexadecimal numbers to their decimal *and* binary representations. You **must show your work** while converting to decimal to earn full credit. You may use a calculator to confirm your answers.
 - (a) 0x12bd
 - (b) 0x1ee7
 - (c) FFFF₁₆
 - (d) 0xec01