



CE1901 HOMEWORK SET 2

INSTRUCTIONS

- **Work** these homework problems by yourself on three-hole punched engineering problems paper. ***Engineering problems paper*** can be purchased at the MSOE bookstore. Some companies call engineering problems paper an “engineering pad.” It is usually green or yellow in color. **Use** the graph paper side **only when drawing graphs**.
- **Do not use calculators** as you work your solutions.
- **Show all work** to receive partial credit.
- **Showing work** means that you illustrate the process you take to complete a problem.
- **Print and three-hole punch** this coversheet. **Staple** to your solution packet.
- **Submit** your paper solution packet at the start of the **second lecture of week 3**.

ASSIGNED PROBLEMS

1. **Convert** base-3 number 1021 to a decimal.
2. **Convert** binary 1010_1100_1010_1011_0100_1101_1010_1101 to hexadecimal.
3. **Convert** hexadecimal 7DA9 to 16-bit binary.
4. **State** the maximum unsigned number that can be encoded in 32 bits. **Include** the general equation you use to calculate it and the decimal result.
5. **Add** decimal numbers 68 + 93 in 8-bit binary. In other words, **convert** each to binary, **complete** addition, **show energy carries between columns**, and **convert** the result back to decimal. **Show** all work.