

# Midterm Preparation

# Questions?

# Information Sources

- In-class exercises
- Zyante book
- Linked web pages
- Lecture notes
- Prior exams
  - Available in the “previous classes” section of my home page

# Exam Parameters

- Closed notes, books, electronic devices
  - Exception: one page of personal notes
- Multiple choice
  - Can grade your exam as you leave
- Assigned seating

# Number Representations

- Conversion between binary and:
  - Decimal
  - Hexadecimal
- Bit-wise operations: `&`, `|`, `~`, `^`

# Arithmetic

- Shifting left/right (multiplication/division by 2)

# Teensy Digital Input/Output

How to use:

- `GPIOx_PDDR`
- `GPIOx_PDOR`
- `GPIOx_PDIR`

# Circuits

- Resistors
- Diodes
- Analog comparators
- Switches

# Moving Between Analog and Digital

Digital to Analog:

- Resistive network

Analog to Digital:

- Successive approximation

# Coding

Possible:

- What does this program do?
- This program is supposed to do X – where are the bugs?

Not on the exam:

- Given a problem, write code to solve it

# Serial Communication

- Serializing bits in time
- Clock signals
- Synchronous vs asynchronous communication

# Finite State Machines

The basics may appear. Given a finite state machine, what happens when a sequence of inputs is received?

- What is the state after the sequence of inputs?
- What is output by the FSM?