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Administrivia

- Reminder: Midterm Wednesday. Review sheet (format and topics) on the Web.
- Sample solutions to quizzes and homeworks online.
- Homework 3 grades mailed earlier today. More coming — soon?

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Minute Essay From Last Lecture

- (Nothing really stood out about Homework 5 or Quiz 3.)
- Many people asked for review of recursion and/or loops.

Overall Review

- For number systems, I probably won't ask you to do a conversion; questions will more likely be about what kinds of data can be represented (e.g., an `int` can't represent 2.5).
- For other topics, questions will likely mostly be like those on quizzes that ask you "what does this code do?" or "write some code to ...".

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Tracing Through Code, Revisited

- To answer questions about what code does, usually useful to trace through its operation.
- (Example with recursion — `gcd` function from homework.)
- (Example with loops — `power-of-2` sample program.)

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“Write Some Code” Questions

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- One thing to be clear on is whether you’re being asked to write a “complete program” (which will probably prompt the user, get input, and then do something, probably printing some kind of output) or “write a function” (which might not get input or print anything, but if not will likely return a value).
- General programming tip: When you declare a variable, think about what it represents and give it a name that reflects that. And then try to make sure the value(s) you assign reflect that. If you can’t think of a good name, that *might* be a sign that you need to rethink?

Functions, Revisited

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- Functions are like math functions, except that they can have “side effects” — “black box” idea.
- Function declaration (and definition) give types of parameters (inputs) and return value (output).
- Calling a function is an expression; evaluating it involves copying actual parameters to parameters in function and executing the function. Value of the expression is what function returns. If function’s return type is `void`, no value is returned. (Might be useful for printing things, e.g.)
- `return` in function means “exit function with this return value”. In `main`, means “exit program”. Return value should be zero if the program worked, nonzero if not (e.g., invalid input).

Recursion and Loops

- (Examples as time permits.)

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Minute Essay

- Any more questions about the exam? or send me mail any time between now and Wednesday morning.

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