Math 115 Fall, 2011

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Assignment due September 1, 2011

Problems beginning on page 17 of the textbook: 1ad, 2, 3ae, 4, 5, 6, 7, 11, 19, 25, 32, 46, 47

Using sage, redo problems 1ad, 2, 3ae and 4 and experiment for yourself by exploring examples with much larger numbers. (You don't have to turn anything in; the aim is for you to start learning sage.)

If you are unsure how to use a command, enter the command name followed by a question mark (or use google).

Some relevant and/or interesting sage commands:

`gcd`: greatest common divisor

`xgcd`: extended gcd, does problems like #2.

`lcm`: least common multiple

`factor`: factors integers, even big ones!

`prime_range(`a`,`b`)`: outputs a list of primes between a and b

`is_prime()`: tells you whether or not a number is prime, e.g., `5.is_prime()` yields "`true`."

`prime_pi(`n`)`: outputs the number of primes $\leq n$.