

Name/CSE Login \_\_\_\_\_

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**Instructions** Follow instructions *carefully*, failure to do so may result in points being deducted. Clearly label each problem and submit the answers *in order*. It is highly recommended that you typeset your homework using L<sup>A</sup>T<sub>E</sub>X or a similar typesetting system. Staple this cover page to the front of your assignment for easier grading. Be sure to submit any programming files via the webhandin (<http://www.cse.unl.edu/~cse235/handin>). Late submissions *will not be accepted*. Be sure to show sufficient work to justify your answer(s). If you are asked to prove something, you must give as formal, rigorous, and complete proof as possible. You are to work individually, and all work should be your own. The CSE academic dishonesty policy is in effect (see [http://www.cse.unl.edu/undergrads/academic\\_integrity.php](http://www.cse.unl.edu/undergrads/academic_integrity.php)).

**Partner Policy** You may work in pairs, but you must follow these guidelines:

1. You must work on *all* problems (including programming) *together*. You may not simply partition the work between you.
2. You must use L<sup>A</sup>T<sub>E</sub>X, but you may divide the typing duties however you wish.
3. You may not discuss problems with other groups or individuals.
4. Hand in only one hard copy and one copy of your program files; do so under the first author's name.

Problem	Page	Points	Score
2.1.20	130	5	
2.1.30	130	5	
2.1.32	130	5	
2.2.6	142	4	
2.2.8	142	4	
2.2.18	142	4	
2.2.58	144	4	
2.4.6	166	4	
2.4.22	167	4	
2.4.50	168	4	
Subtotal			

Problem	Page	Points	Score
2.4.48	168	4	
2.5.20	180	4	
2.5.22bdf	180	3	
2.6.8	194	4	
2.6.10	194	4	
2.6.18	195	4	
2.6.46	196	4	
Program			
Correctness		25	
Style/Doc		5	
Total		100	

For 2.1.20, 30 and 32, give good pseudocode. In addition, also analyze your algorithm and give an asymptotic characterization. You may find the `algorithm2e` package useful in typesetting algorithms.

For 2.5.22bdf, use the *extended* euclidian algorithm to express  $\gcd(a, b)$  as a linear combination of  $a, b$ .

### Programming Assignment

You will implement a `Matrix` class in C++. The same standards as previous assignments apply. See the header file on the recitation web page for more details.