Name and ID\#: $\qquad$

| Problem | Points Possible | Points |
| :---: | :---: | :---: |
| 1 | 30 |  |
| 2 | 40 |  |
| 3 | 30 |  |
| 4 | 30 |  |
| 5 | 40 |  |
| 6 | 30 |  |
| Total | 200 |  |

## INSTRUCTIONS:

1. Show your work. Use the correct notation. Use only the methods developed so far in the course (example: do not use methods from later chapters that you may have learned elsewhere). Correct answers without sufficient work, or not using the method required will receive minimal or no credit. If you use a theorem from the book, you need to tell us which one you are using: give its name (example: "dimension theorem"), or its statement (example: "any two bases have the same number of elements").
2. The point-values of each problem are clearly indicated.
3. Provide clearly written answers in the space provided. You can use the flip sides of the pages and page 8 as scrap paper. Do not tear off any page. You must return all 8 pages.
4. No books. No notes. Cell phones off and in backpack. No devices. No calculators.
