The Rank of a Matrix

MATH 204: Linear Algebra
Prepare for class November 30, 2018 Name (Print): _____

After reading Section 4.6, work through the following ideas.

1. What is the row space of an $m \times n$ matrix A?

2. Fill in the blanks: Each row has _____ entries, so _____ is a subspace of _____.

   We can also write _____ in place of _____.

3. (a) State Theorem 4.13: Row Equivalent Matrices and Their Row Spaces.

   (b) Suppose matrix C is obtained from matrix A by doing the following row operation: Replace row 2 of A with row 2 minus 3 times row 1. Is row 2 of C a linear combination of the rows of A? Why or why not?

   (c) Take a look at the proof of Theorem 4.13. Why is Row B contained in Row A?

4. What is the definition of rank?

5. Try Exercise 1 on page 238.

6. What is the warning on top of page 235? Be careful!!!

7. State the Rank Theorem (Theorem 4.14).

8. Write down any questions you have on the reading.