HW 6  
Math 261, S18

Please see the course syllabus for details on how to turn in your homework assignments. This one is due at the beginning of your class on **Friday, March 23**.

1. Suppose we wish to integrate \( f(x, y) = 3x^2 - xy + 3 \) over the rectangle given by \( 0 \leq x \leq 2, \ 1 \leq y \leq 5 \). Set up this integral using the variable order \( dx \, dy \) but do not compute the answer.

2. Now compute the answer to the previous problem.

3. Repeat problem 1 using variable order \( dy \, dx \).

4. Compute the answer to problem 3.

5. Suppose we wish to integrate some function \( g(x, y) \) over the triangle with vertices \((0, 0), (0, 2), \) and \((1, 2)\). Set up this integral using the variable order \( dx \, dy \). (Do not compute the answer.)

6. Repeat the previous problem using variable order \( dy \, dx \). (Again, do not compute the answer.)