

Name: \_\_\_\_\_

Task Master: \_\_\_\_\_ Cynic: \_\_\_\_\_ Recorder: \_\_\_\_\_

MTH 254

## INTEGRATION

Spring 2015

*Working in small groups (3 or 4 people), solve as many of the problems below as possible. Try to resolve questions within the group before asking for help. Each group member should then write up the solutions in their own words; Show your work! Full credit will only be given if your answer is supported by calculations and/or explanations as appropriate.*

1. Reverse the order of integration in the following expression:

$$\int_{-4}^0 \int_0^{8+2x} Q \, dy \, dx + \int_0^4 \int_0^{8-2x} Q \, dy \, dx$$

where  $Q$  is an unknown function of  $x$  and  $y$ .

*Do not evaluate the integral (yet)!*

2. Choose a function  $Q$ . Evaluate both the original expression and your reversed version. Do you get the same answer?  
*If both integrals are too hard, start over. If one integral is doable, but the other is not, say so — and consider starting over but turning in both examples.*