

Quiz 11

Name: _____

Assigned: **Friday April 24**

Time Begun: _____

Due: **Monday April 27**

Time Ended: _____

Prof. Ron Buckmire

Topic : Green's Theorem

The idea behind this quiz is to provide you with another opportunity to illustrate your ability to apply both sides of Green's Theorem.

Reality Check:

EXPECTED SCORE : _____/10

ACTUAL SCORE : _____/10

Instructions:

1. Once you open the quiz, you have **30 minutes** to complete, please record your start time and end time at the top of this sheet.
2. You may use the book or any of your class notes. You must work alone.
3. If you use your own paper, please staple it to the quiz before coming to class. If you don't have a stapler, buy one. QUIZZES WITH UNSTAPLED SHEETS WILL NOT BE GRADED.
4. After completing the quiz, sign the pledge below stating on your honor that you have adhered to these rules.
5. Your solutions must have enough details such that an impartial observer can read your work and determine HOW you came up with your solution.
6. Relax and enjoy...
7. **This quiz is due at the beginning of class on Monday April 20.**
NO LATE OR UNSTAPLED QUIZZES WILL BE ACCEPTED FOR GRADING.

Pledge: I, _____, pledge my honor as a human being and Occidental student, that I have followed all the rules above to the letter and in spirit.

Consider the vector field $\vec{F}(x, y) = (x - y)\hat{i} + (x + y)\hat{j}$ and the closed path C which is the circle of radius 2 centered at the origin traversed in the counter-clockwise direction. Evaluate the expression

$$\mathcal{I} = \oint_C \vec{F} \cdot d\vec{x} \text{ two different ways.}$$

(a) (5 points.) Compute \mathcal{I} directly.

(b) (5 points.) Compute \mathcal{I} by evaluating a double integral and applying Green's Theorem.