

Math 427L (Rusin) — EXAM 2 , free response questions

Please review the email I sent yesterday that explains the rules for this midterm exam. A copy may be found at

<http://web.ma.utexas.edu/users/rusin/427L-20a/t2-rules>

These two free-response questions are worth 14 points each. I need to see the part of your work that leads you to the right answer. Make sure you write out your answers, scan them, and upload them to Canvas by Friday at 2pm Austin time.

Also go to Quest to find multiple-choice questions, worth 8 points each. You have two hours to complete that portion after you start. You must also finish tht portion by Friday at 2pm Austin time.

Good luck

FR1. Compute the double integral $\int \int_R (6xy + 32x) \, dx \, dy$ where R is the diamond-shaped region around the origin which is bounded by the lines

$$x + 2y = 2, \quad x - 2y = 2, \quad x + 2y = -2, \quad x - 2y = -2$$

FR2. An *ice cream cone* is the portion of the cone $x^2 + y^2 = z^2$ that lies inside the sphere $x^2 + y^2 + z^2 = 6z$. What is the surface area of this ice cream cone?