MTH 233-001 Final Exam Information

Our cumulative 100-point final exam will consist of ten 10-point problems. Two of those problems will be take-home problems, assigned on May 9 and due on May 11. The remaining eight problems will be in-class problems on May 11 during our last class meeting. In order to receive full credit for the problems, you must show all work or supply explanations that support your answer. The take-home problems must be worked individually.

The final exam will cover the objectives listed below. Focus your studying on these skills.

Final exams skills list

1. Find parametric or symmetric equations for a line in space. (Section 2.5)
2. Find the angle between two planes. (Section 2.5)
3. Integrate vector-valued functions. (Section 3.2)
4. Compute the unit tangent vector for a vector-valued function. (Section 3.2)
5. Find the arc-length parameterization for a smooth curve. (Section 3.3)
6. Solve a projectile motion problem in space. (Section 3.4)
7. Compute the limit of a multi-variable function. (Section 4.2)
8. Use the two-path test to show that a limit does not exist. (Section 4.2)
9. Compute the total differential of a function and use it to approximate change. (Section 4.4)
10. Use gradient vectors as normal vectors. (Section 4.6)
11. Find an equation of the plane tangent to a given surface at a point. (Section 4.4)
12. Find parametric equations for the line normal to a given surface at a point. (Section 4.4)
13. Compute directional derivatives and interpret them as slopes. (Section 4.6)
14. Find the critical points of a function of two variables. Use the second partials test to classify critical points. (Section 4.7)
15. Write a double integral as an iterated integral and evaluate. (Section 5.2)
16. Change the order of integration in a double integral. (Section 5.2)
17. Use double integrals in polar coordinates to compute areas and volumes. (Section 5.3)
18. Use a triple integral to compute the average value of a function over a space region. (Section 5.5)
19. Evaluate line integrals. (Section 6.2)
20. Apply Green's theorem. (Section 6.4)