

240 - Calculus III: Test 1 Study Guide

Henson - Fall 09

TEST 1 TOPICS:

* You may bring a 3×5 card with notes on it front and back!

**Make sure to know all derivative rules and integration techniques from Calc I and II.

*** QUADRIC SURFACES from section 11.6 will not be covered on Test 1.

1. Component form of a vector.
2. Norm of a vector.
3. Converting a line segment to a vector in component form.
4. Computing the unit vector associated with a vector \vec{v} .
5. Standard unit vectors.
6. Applications using force vectors.
7. Dot product of two vectors.
8. Cross product of two vectors (by hand).
9. Finding the angle between two vectors.
10. Computing the projection of \vec{v} onto \vec{u} .
11. Computing the work done by a force along a line segment \vec{PQ} .
12. Computing torque.
13. The equation of a line in 3D space.
14. The equation of a plane in 3D space.
15. Computing the distance between a point and a plane.
16. Computing the distance between a point and a line.
17. Graphing cylinders in 3D space.

18. Graphing solids of revolution in 3D space.
19. Conversions to cylindrical coordinates.
20. Conversions to spherical coordinates.