Calculus D - Exam # 1 Review

- No calculators, No notes, No re-takes
- 10 questions x 5 points each = 50 points total

- Basic vector operations (Including: dot product, cross product, parallelogram area, angles, projections)

- Planes and Lines (Including: defining, intersecting, etc.)

- Identifying surfaces from their equations (planes, quadric surfaces, cylinders, simple surfaces, etc.)

- Vector-Valued Functions as parametric descriptions of curves in space (Including: intersection of surfaces)

- Differentiation and Integration of Vector-Valued Fcns.

- Position ↔ Velocity ↔ Acceleration

- Unit Tangents, Principal Unit Normal Vectors (Including: $a_{\mathbf{T}}$ and $a_{\mathbf{N}}$)

- Arc length, including re-write $\mathbf{r}(t)$ to $\mathbf{r}(s)$

- Curvature (all formulas given for curvature)

- No Cylindrical or Spherical (We'll see plenty of this later.)