

Study guide for quiz 10

Quiz problems include both the lecture contents and homework problems.

1. Section 14.10:

Review partial derivatives with constrained variables. In particular, study how to identify the independent variables and dependent variables from all the variables and the number of equations/constraints. Study how to find partial derivatives with constrained variables when it is difficult to solve the dependent variables explicitly as functions of the independent variables such as problem 12.

2. Section 15.1, 15.2:

Study how to identify the limits of integration in $\int_c^d \int_{h_1(y)}^{h_2(y)} f(x, y) \, dx dy$ and $\int_a^b \int_{g_1(x)}^{g_2(x)} f(x, y) \, dy dx$ for general domains (that is, not rectangles).

3. Section 15.2:

Study how to interchange between $\int_c^d \int_{h_1(y)}^{h_2(y)} f(x, y) \, dx dy$ and $\int_a^b \int_{g_1(x)}^{g_2(x)} f(x, y) \, dy dx$ for general domains as in problems 33-56 of section 15.2.