

DAILY FUNCTION ASSIGNMENTS FOR OPTIMIZATION LAB

Important: In some cases, the absolute maximum of f in the specified domain is only a local maximum for f in the plane. Working with the wrong domain spoils everything in such situations. Students should make an extra effort to get the domain right.

MONDAY

$$f(x, y) = \frac{xy}{2 + 2x^4 + y^4}; \quad 0 \leq x \leq 3, \ 0 \leq y \leq 4.$$

TUESDAY

$$f(x, y) = 30xy - 10x^3 - 5y^3; \quad -0.5 \leq x \leq 2.5, \ -0.5 \leq y \leq 3.0.$$

WEDNESDAY

$$f(x, y) = x^2 y e^{-x^2 - y^2}; \quad 0 \leq x \leq 2, \ 0 \leq y \leq 2.$$

FRIDAY

$$f(x, y) = 4xy - x^4 - y^3; \quad -3 \leq x \leq 3, \ -\frac{1}{2} \leq y \leq 3.$$