Brady O'leary

1. Find the equation for a plane tangent to the following

    a. $z = \sqrt{x^2 + y^2}$ at the point (1,2,1)

Jessica spurling

2. Find the gradient (∇f) of the function at the given point.

    a. $f(x,y) = x^2y$ (1,-2)

    b. $f(x,y,z) = 2x^2+y^2+3z^2+z\ln(y)$ (1,1,-1)

3. Find the directional derivative of the function P_0 in the direction of u.

    a. $f(x,y) = 5xy-4y^2$ $P_0(-4,5)$ $u = 5i+4j$

    b. $f(x,y,z) = \cos(x)+e^{zy}$ $P_0(1,1)$ $u=i+j+2k$

John Noe

4. Find the local extrema of the following equation

    a. $f(x,y) = x^3 - 12xy + 8y^3$

    b. $f(x,y) = x^3 + y^3 + 6x^2 - 3y^2 - 5$

    c. $f(x,y) = e^{4x^2+2y^2-24x}$

Joe Hoshi

5. Find the following critical points

    a. $f(x,y) = 4 + x^3 + y^3 - 3xy$

    b. $f(x,y) = sin^2x - cosy + 3xy$

    c. $f(x,y) = \frac{1}{3}x^3 - 4x + \frac{1}{2}y^2 + y^3$

Joseph Bass

6. Sketch the following domain to the best of your ability; The closed triangular plate bounded by x=0 y=8 and y=8x

7. Sketch the following domain to the best of your ability; The closed region $0 \leq x \leq 9$, $-3 \leq y \leq 2$

8. Sketch the following domain to the best of your ability; The rectangular plate $2 \leq x \leq 5$, $-\pi/4 \leq y \leq \pi/4$

Mike Doung

9. Find the absolute maximum and minimum of the function $f(x,y) = 2x^2 - 8x + y^2 - 8y + 6$ on the closed triangular plate bounded by the lines x=0, y=4, and y=2x in the first quadrant

10. Find the absolute maxima and minima of the function on the given domain $T(x,y) = x^2 + xy + y^2 - 6x + 9$ on the rectangular plate $0 \leq x \leq 5, -3 \leq y \leq 0$

11. Find the absolute maximum and minimum of the function $f(x,y) = (24x - 6x^2)$ cosy on the rectangular plate $1 \leq x \leq 3, -\frac{\pi}{4} \leq y \leq \frac{\pi}{4}$.

Thorya Aadland

12. Find the absolute maxima/minima of the function on the given borders, $f(x,y) = 2x^2 + 6y^2$ in the closed triangular plate by the lines x=0, y=0 and y+2x=0 in the first quadrant