

We prefer that you write your solutions on printed copies of pages 2 through 4 of this document. However, you may instead rewrite the questions by hand before solving them. You'll submit your solutions to Crowdmark. You will need to generate a scan or image of each page of your work. You should be able to keep the size of each file around 1 MB or less, while maintaining the clarity of the image (your writing should not be faint or fuzzy in your images). A cell phone scanner app is a good way to generate clear, relatively small image files. Always give enough work and clear explanation so that fellow students could follow what you did (from start to finish) just by reading your paper. Your grader may choose to grade some or all of your work on this assignment. Your score on each written homework will be scaled to a 10-point score in the Canvas grade book.

Write your name to attest that this is your own original work: \_\_\_\_\_

- [10] 1. Find an equation for the tangent plane to the surface  $\ln(x + 2y) + \frac{x^2y}{z} = 18$  at the point  $(-3, 2, 1)$ .

Write your name to attest that this is your own original work: \_\_\_\_\_

- [10] 2. Find the linearization of the function  $f(x, y) = \sqrt{x^2 + 4y}$  at the point  $(-1, 2)$ .  
Give your solution in the form  $L(x, y) = A + Bx + Cy$ , where  $A, B, C$  are constants.