Homework 30 (Chap. 14.3), 68.00/90.00 (75.56%)

May 7, 2020

Problem 2 score: 10/10

good

Problem 15 score: 10/10

good

Problem 19 score: 0/10[1]

$$2.2 - 4.9 + 9 \neq 4.3\,(= 6.3)$$

Problem 23 score: 10/10

good

Problem 30 score: 10/10

good

Problem 34 score: 10/10

good, but why didn't you substitute π?

Problem 43 score: 8/10[2]

overall good, but you forgot Δx^2 in

$$\Delta z = f(x + \Delta x, y + \Delta y) - f(x, y) = (x + \Delta x)^2 + (y + \Delta y)^2 - x^2 - y^2 = 2x\Delta x + \Delta x^2 + 2y\Delta y + \Delta y^2$$
$$\implies \Delta z = 2x\Delta x + 2y\Delta y + \Delta y^2 = \dots$$

Problem 45 score: 10/10

good

[1] similar problems: 20,21
[2] similar problems: 44,42

Problem 46 score: 0/10[3]

Where did you write "(a)"?

(a) bad: wrong computation of $f_x(0,0)$ and $f_y(0,0)$ ($f(h,0) \neq h/h^2 (= 0)$).

(b) bad: the following is wrong:

$$\lim_{(x,y)\to(0,0)} \frac{y^3 + yx^2 - 2x^2y}{(x^2+y^2)} = \infty$$

(try approaching along the line $y = 0$).

[3]similar problems: 44,42