

exercise 1:

Section 4.3 problems: 112, 113, 118, 119, 121, 128.

exercise 2:

Section 4.4 problems: 170, 172, 173, 180.

exercise 3:

Section 4.4 problems: 195, 200.

exercise 4:

~~Section 4.4 problems: 195, 200.~~

Ignore exercise 4, there was an editing error.

exercise 5:

Section 4.5 problems: 227, 229: proceed as indicated in 227 in 229 as well.

Section 4.5 problems: 245.

exercise 6:

Section 4.5 problem: 258.

exercise 7:

Section 4.6 problem: 260, 265, 282.

exercise 8:

Section 4.6 problem: 294, 300.

exercise 9:

Section 4.4 problem: 173, 175, 184.

For these three exercises use the method involving the gradient of $F(x, y, z)$. Note that 173, 175 can be solved using an $z = f(x, y)$ type of equation.