exercise 1:
Section 4.3 problems: 118, 119, 121, 128.

exercise 2:
Section 4.4 problems: 170, 172, 173, 180.

exercise 3:
Section 4.4 problems: 195, 200.

exercise 5:
Section 4.5 problems: 227, 229: for 229 proceed as suggested in 227.
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. In 184, the direction of the normal line is given by the gradient.