Electricity and Magnetism, PHYS 350 Problem set 3:

1. Problem 3.16 (3.15).
2. Problem 3.19 (3.18).
3. Problem 3.22 (3.21).
4. Problem 3.23 (3.22).
5. Problem 3.24 (3.23).
6. Problem 3.44 (3.38).
7. Problem 4.5 (4.5).
8. Problem 4.7 (4.7).
9. Problem 4.8 (4.8).
10. Problem 4.11 (4.11).
11. Problem 4.13 (4.13).
12. A point charge q is situated a large distance r from a neutral atom of polarizability α.
    a) Find the induced dipole moment.
    b) Find the $\underline{E}$ field generated by this dipole moment.
    c) Find the force of attraction (magnitude and direction) between the atom and the charge.

Optional problems C:

C1. Problem 3.15 (3.14).
C2. Problem 3.20 (3.19).
C3. Problem 3.52 (3.45).
C4. Problem 4.6 (4.6).
C5. Problem 4.8 (4.8).
C6. Problem 4.14 (4.14).

(Numbers from Griffiths book, 3rd edition)