

Problem Set 11

(Due: January 22, 2009)

1) A long straight wire sits in the plane of a square loop whose sides are length a and whose resistance is R . The near side of the square is parallel to the straight wire and a distance d from it (so the far side is a distance $d + a$ from the straight wire). If the straight wire carries a current $I(t) = I_0 \sin(\omega t)$, what is the current induced in the square loop?

2) Jackson, problem 6.1.

3) Jackson, problem 6.4.