HOMEWORK #2 (M427K FALL 2004)

1. Simplify Using Trig Identities

$$\cos(2x)\cos(5x) = ?$$

(hint: $\cos(x \pm y) = \cos(x)\cos(y) \mp \sin(x)\sin(y)$)

2. Integrate the expression

$$\cos(2x)\cos(nx)dx$$

(hint: use result from previous exercise)

3. Solve the differential equation

$$(x - y)dx + (x + y)dy = 0$$

(hint: homogeneous equation. try substitution $y = ux$)