Part I Problems

Problem 1: Write each of the following functions $f(t)$ in the form $A\cos(\omega t - \phi)$. In each case, begin by drawing a right triangle.

a) $2\cos(3t) + 2\sin(3t)$

b) $\sqrt{3}\cos(\pi t) - \sin(\pi t)$

c) $\cos(t - \frac{\pi}{8}) + \sin(t - \frac{\pi}{8})$

Problem 2: Find $\int e^{2x} \sin x \, dx$ by using complex exponentials.

18.03SC Differential Equations
Fall 2011