Calc II in class

Tuesday, June 08

1. Evaluate the following integrals
   (a) $\int \cos(x)e^{\sin(x)}dx$
   (b) $\int \frac{x}{x^2+1}dx$
   (c) $\int x^2\sqrt{x+1}dx$
   (d) $\int_0^2 x\sqrt{4-x^2}dx$
   (e) $\int_0^{\pi^2} \frac{\sin(\sqrt{x})}{\sqrt{x}}\,dx$
2. Show that, for any integrable function f,
$$\int_0^1 f(x+1)\,dx = \int_1^2 f(x)\,dx.$$
   What is the geometrical interpretation of this formula?