Problem statement Verify that $\displaystyle\int_1^2 \frac{3x^2+6x+2}{x(x+1)(x+2)}\,dx = \ln 4.$

Problem statement Suppose $F(x) = \int_0^x e^{(t^2)}dt$.

a) Compute $\displaystyle\lim_{x\to\infty} \frac{xF(x)}{e^{(x^2)}}$.

b) Compute $\displaystyle\lim_{x\to 0} \frac{F(x)}{xe^{(x^2)}}$.

Problem Statement

Compute $\displaystyle\int \sec x\,dx$

Problem statement The graph of f is shown to the right. The function $F(x)$ is defined by $F(x) = \int_0^x f(t)\,dt$ for $0 \le x \le 4$.

a) Find $F(0)$ and $F(3)$.

b) Find $F'(1)$.

c) For what value of x does $F(x)$ have its maximum value? What is this maximum value?

Where is F increasing? decreasing? Concave up? Concave down? Relate all these answers to the graph of f.