Mat 112   Sept. 2006

2 (a): $f_{max} = \frac{1}{4}$, $f_{min} = \frac{-1}{4}$ (b): $\nabla g = 2x\bar{\imath} + 4y\bar{\jmath} + e^z\bar{k}$

$4(x-2) + 4(y-1) + z = 0$

(c): $x = \frac{t}{2}$, $y = \frac{t}{4}$, $e^z = -t$, der $t = \frac{4 - \sqrt{184}}{3}$

3 (a): $\frac{\pi}{4} + 1$,   (b): $\frac{\pi}{\sqrt{2}}$

4 (b): $\int_0^1 \frac{\sin x}{x}\, dx = \sum_0^\infty \frac{(-1)^n}{(2n+1)(2n+1)!}$ (To ledd er nok)

(c) : $\frac{1}{2} \sum_0^\infty (-1)^n \frac{(2x)^{2n+1}}{(2n+1)!}$ + $\sum_1^\infty (-1)^{n+1} \frac{x^{n-1}}{(2n)!}$

5 (b): $|f'| \leq 1$ (c) $\frac{1}{f}$ blir kont. og dermed uniformt kont.