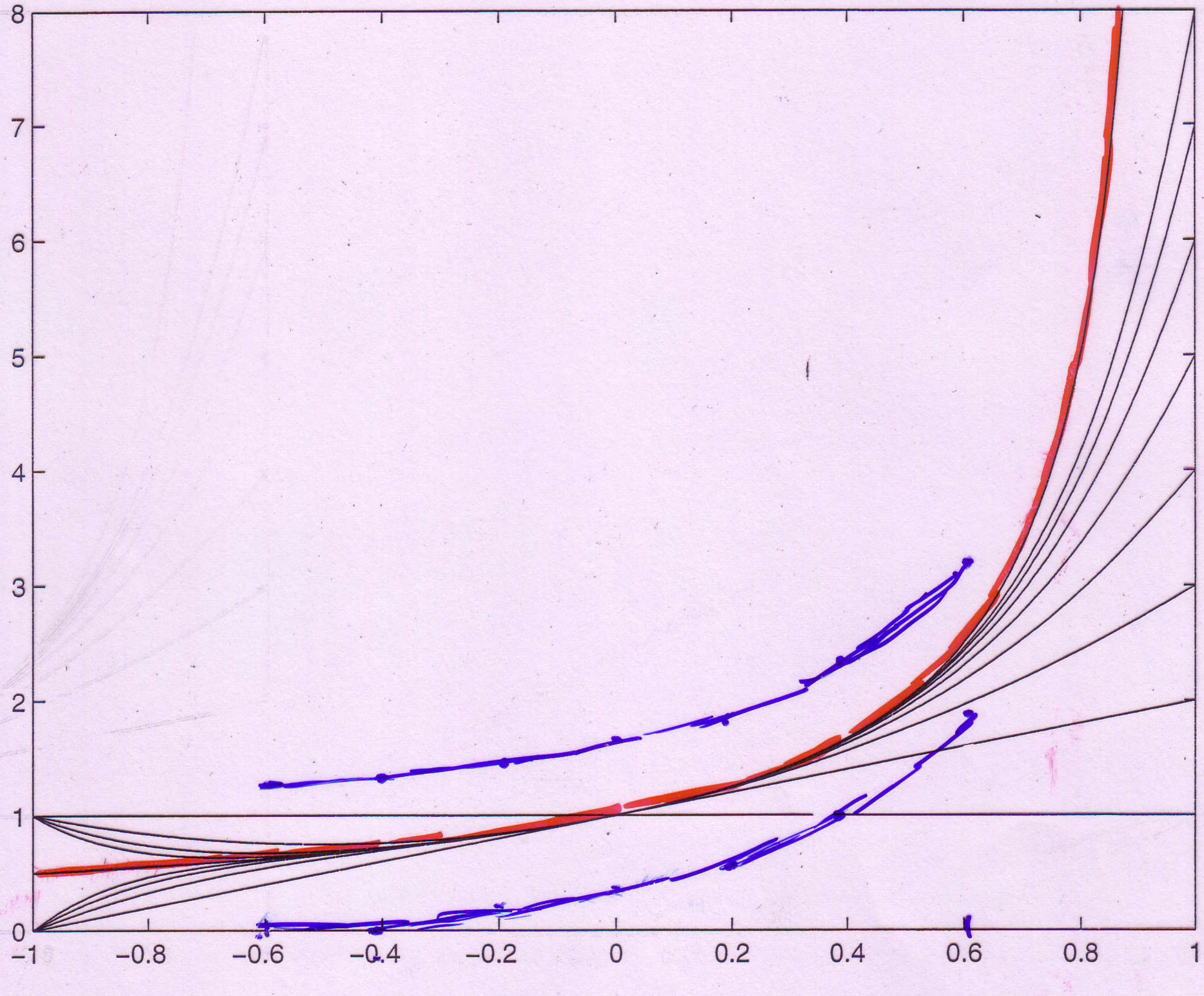
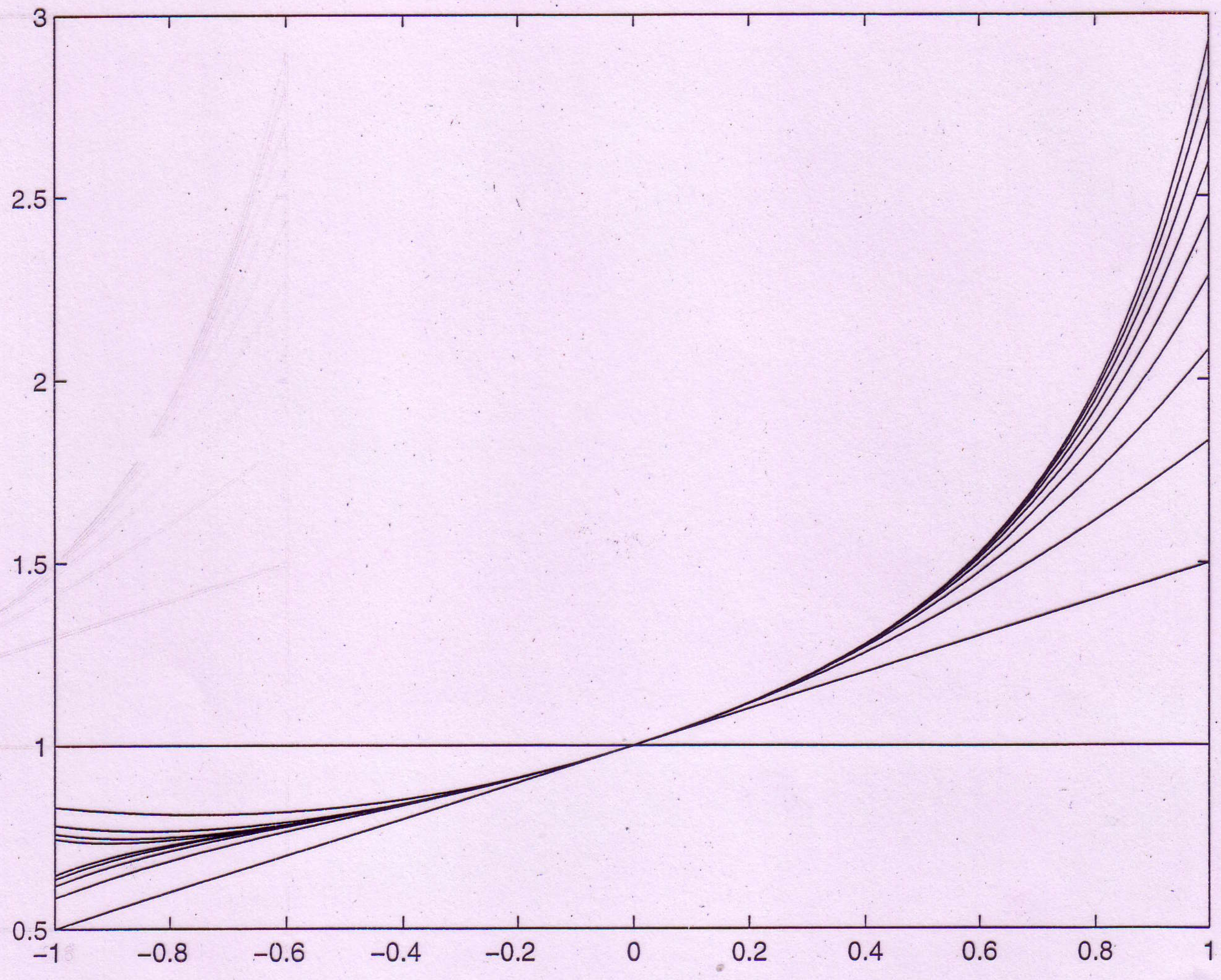
$\sum x^k \quad , \quad \frac{1}{1-x}$



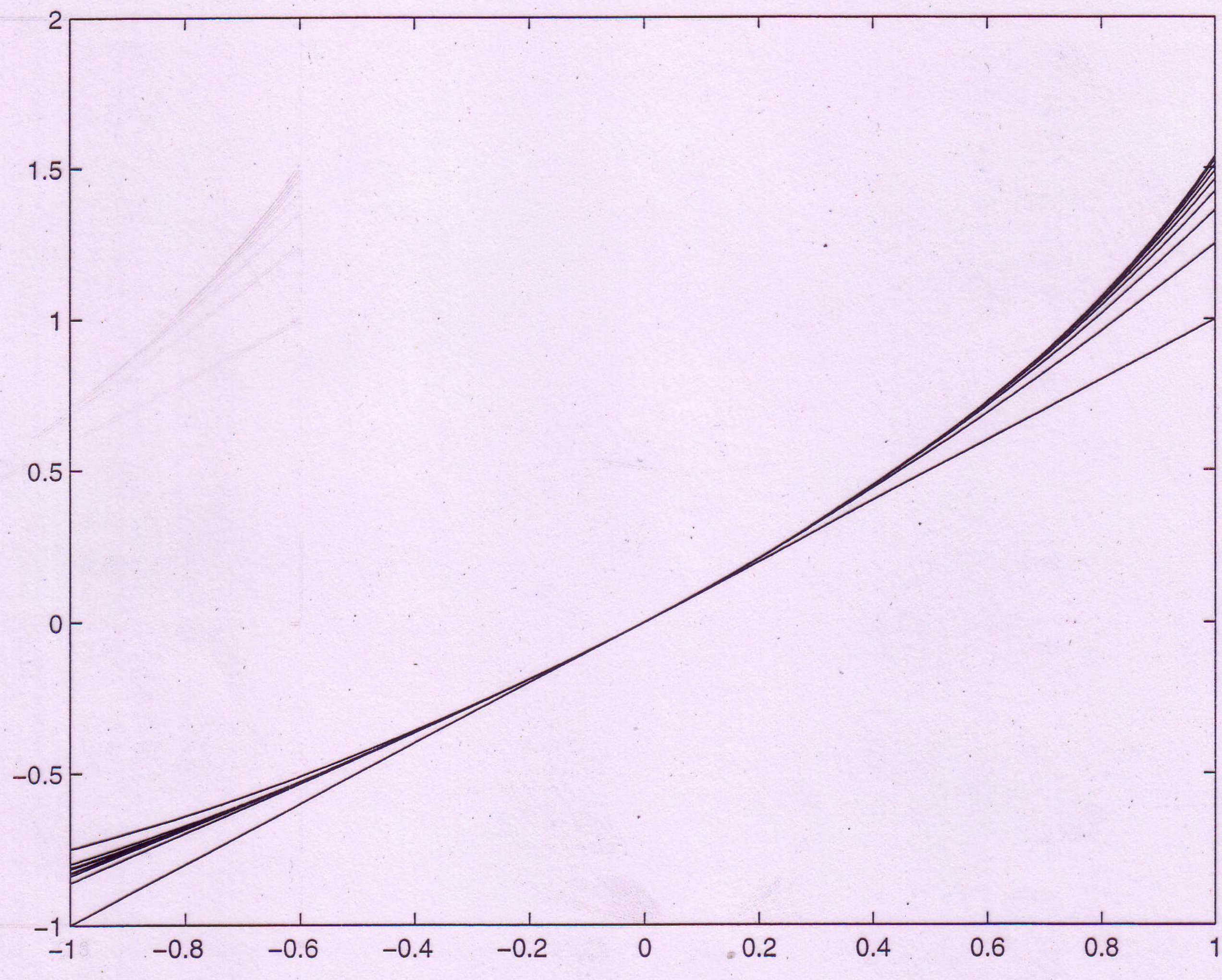
$D = (-1, 1)$

$$\sum \frac{1}{k+1} x^k$$



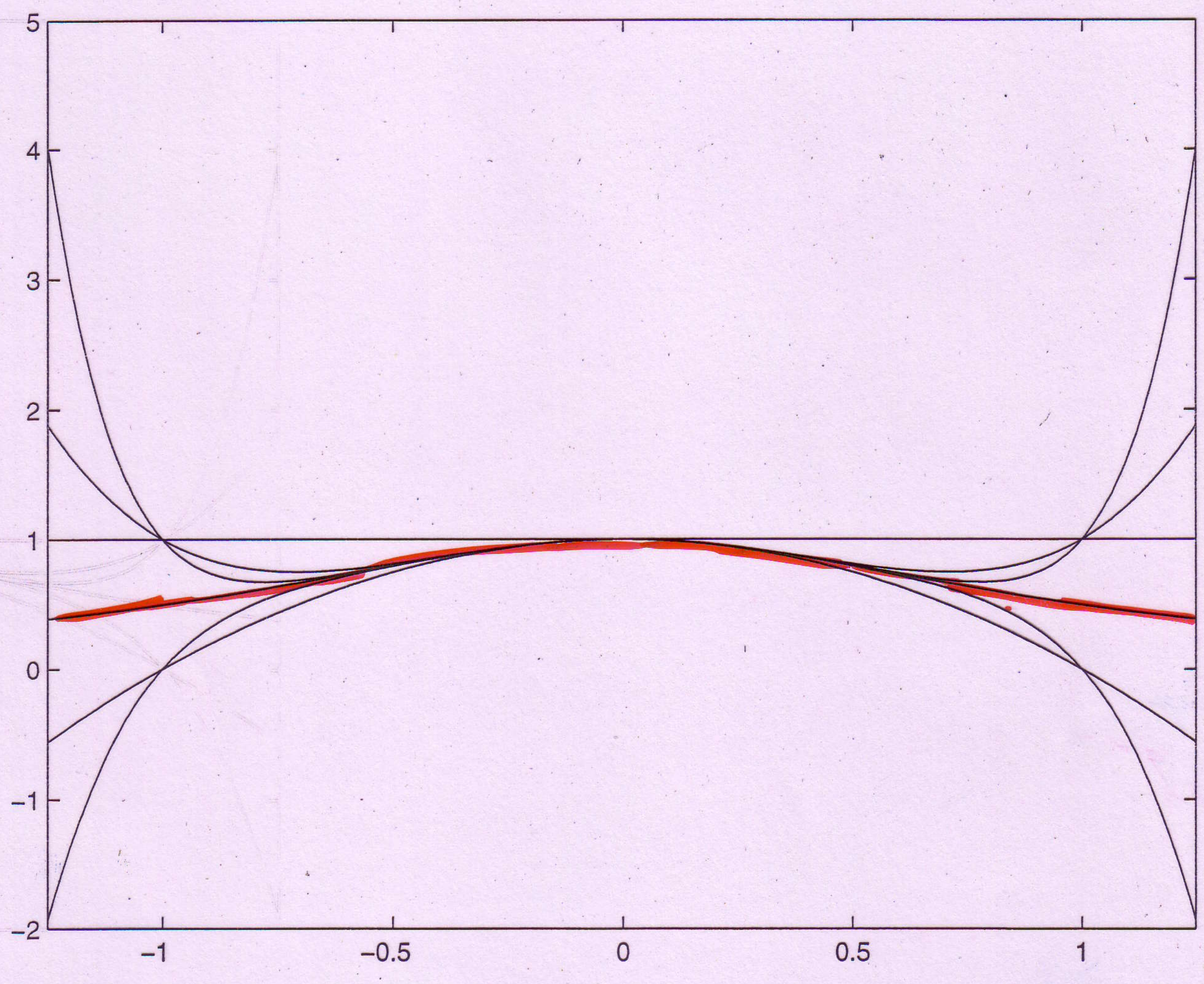
$D = [-1, 1)$

$$\sum_{k=1}^{\infty} \frac{1}{k^2} x^k$$



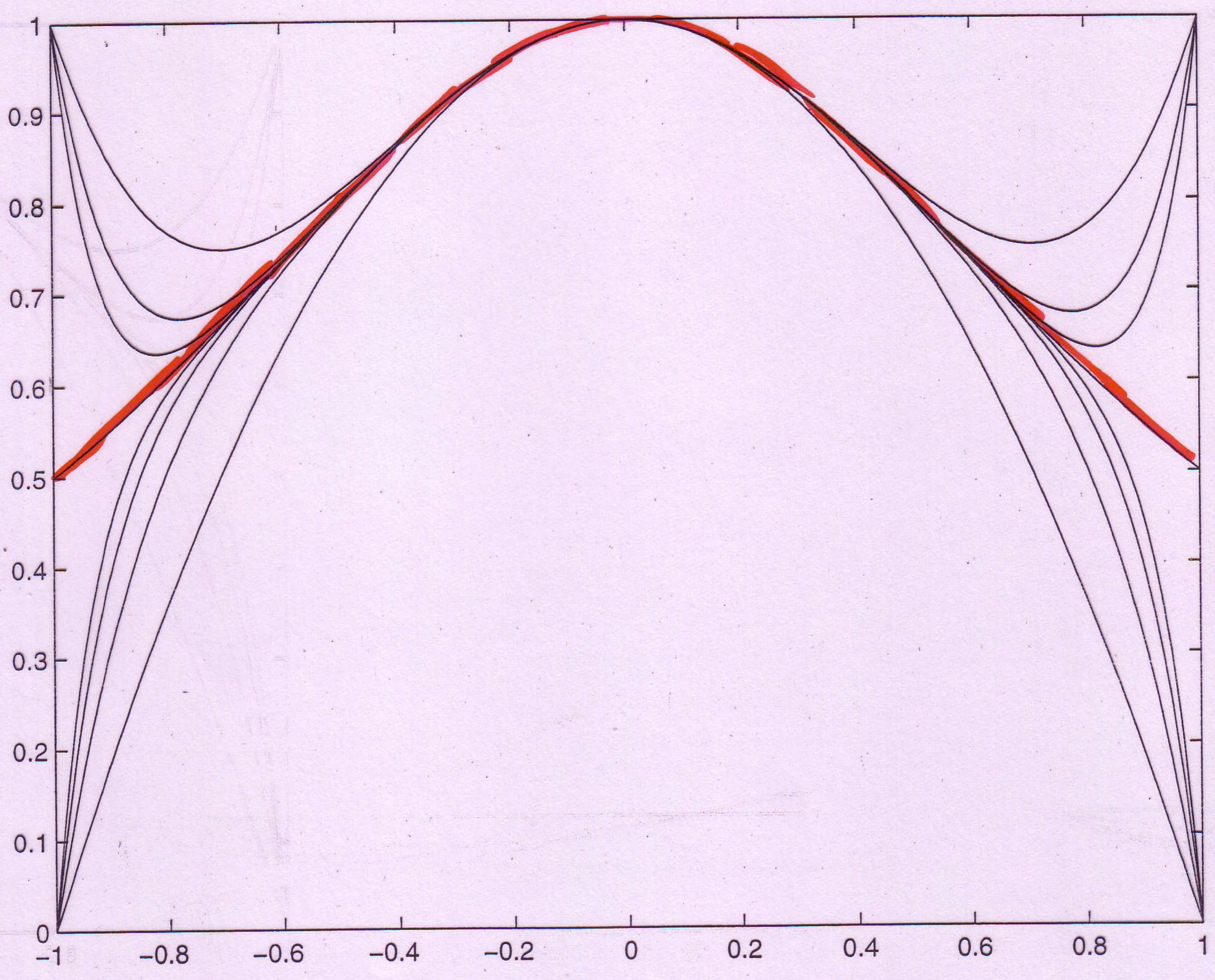
$D = [-1, 1]$

$$\sum (-1)^k x^{2k} \qquad \frac{1}{1+x^2}$$



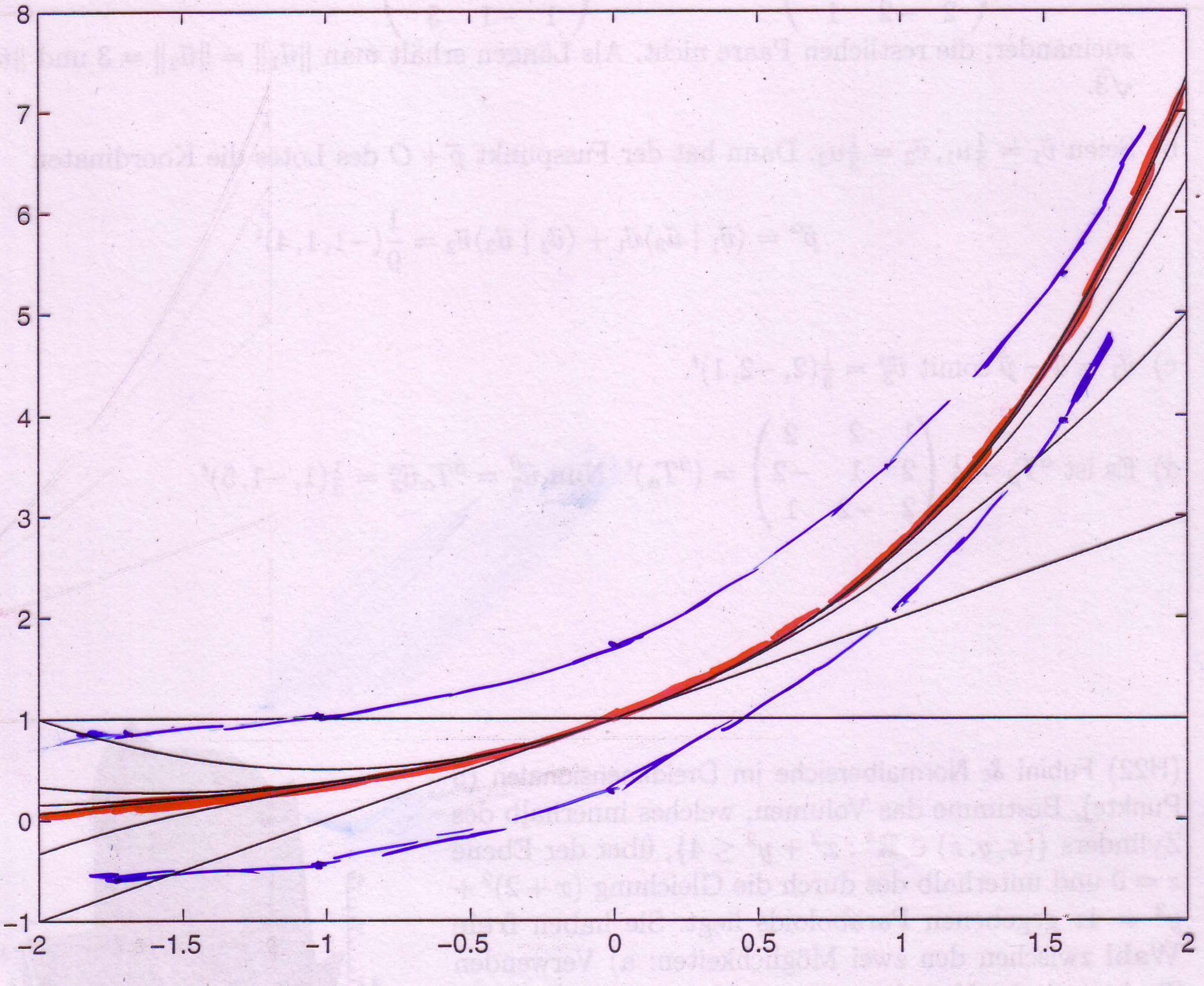
$D = (-1, 1)$

$\sum (-1)^k x^{2k}$ $\qquad$ $\frac{1}{1+x^2}$



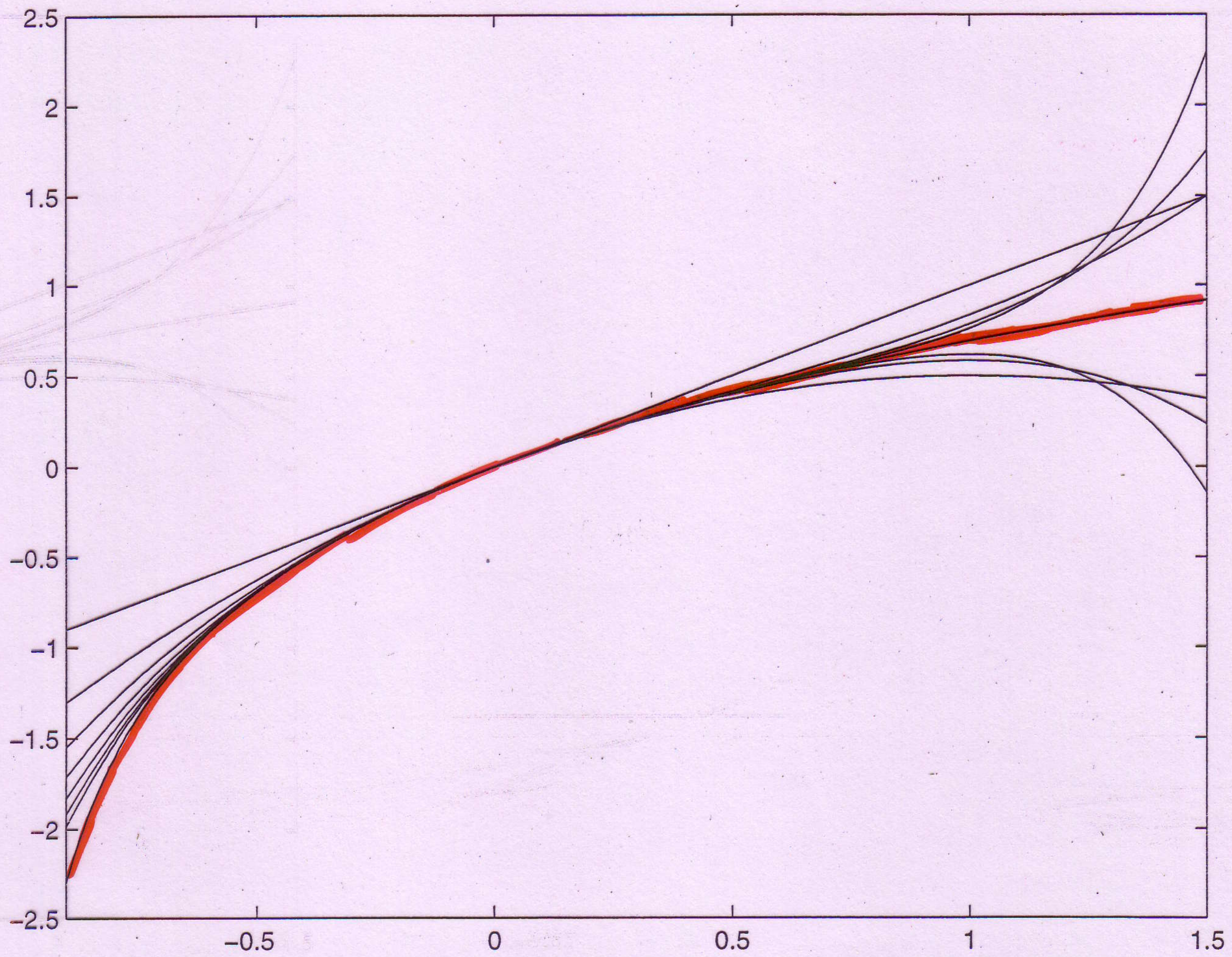
$D = (-1, 1)$

$$\sum \frac{1}{k!} x^k, \quad \exp(x)$$



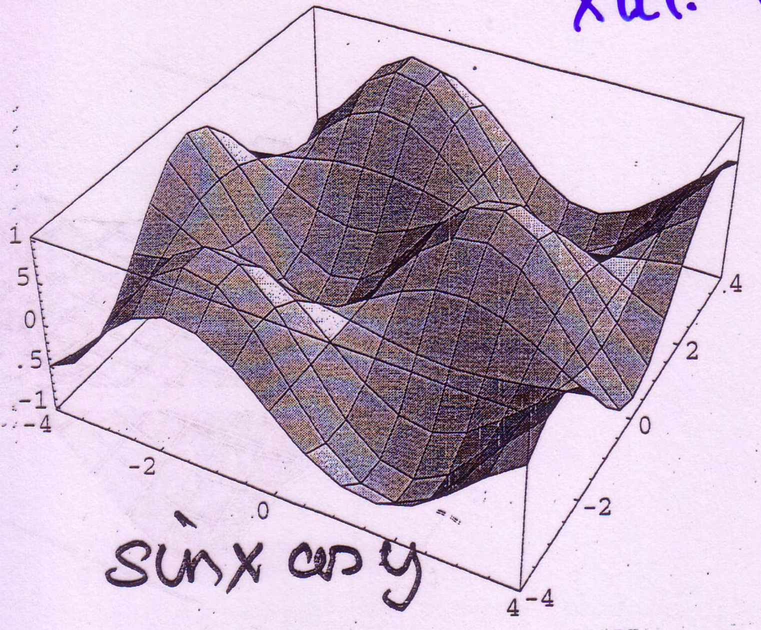
$D = \mathbb{R}$

$\sum_{k=0} (-1)^k \frac{1}{k+1} x^{k+1}$ $\qquad$ $\log(1+x)$

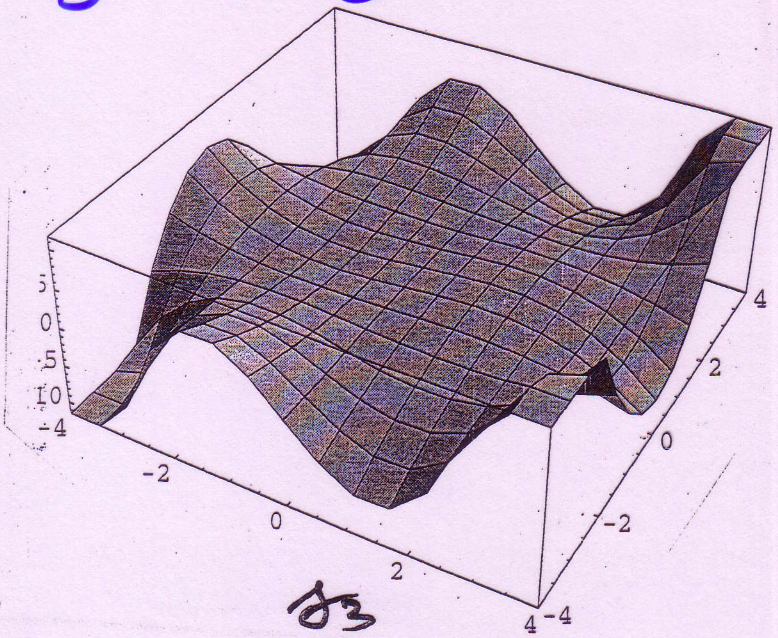


$D = [-1, 1]$

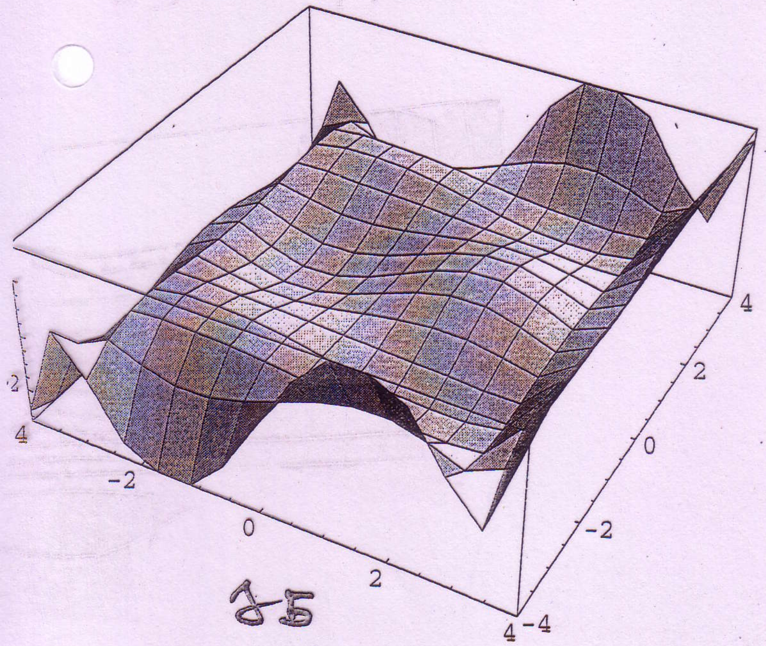
XIII. Taylor Polynom



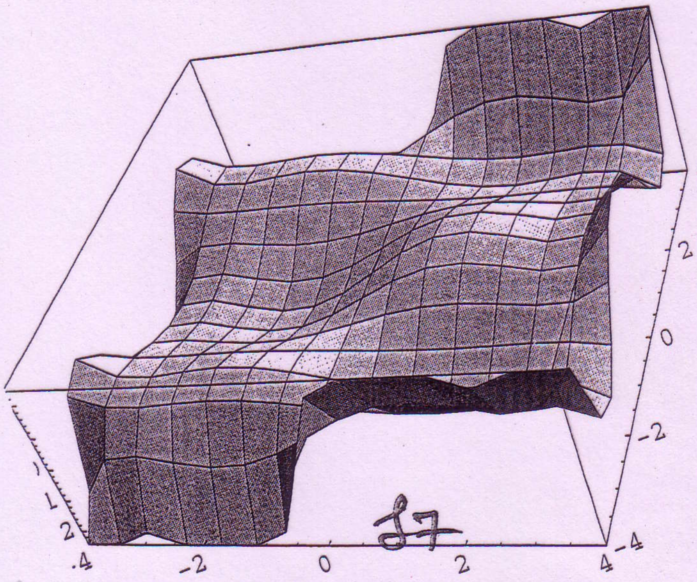
sin x cos y



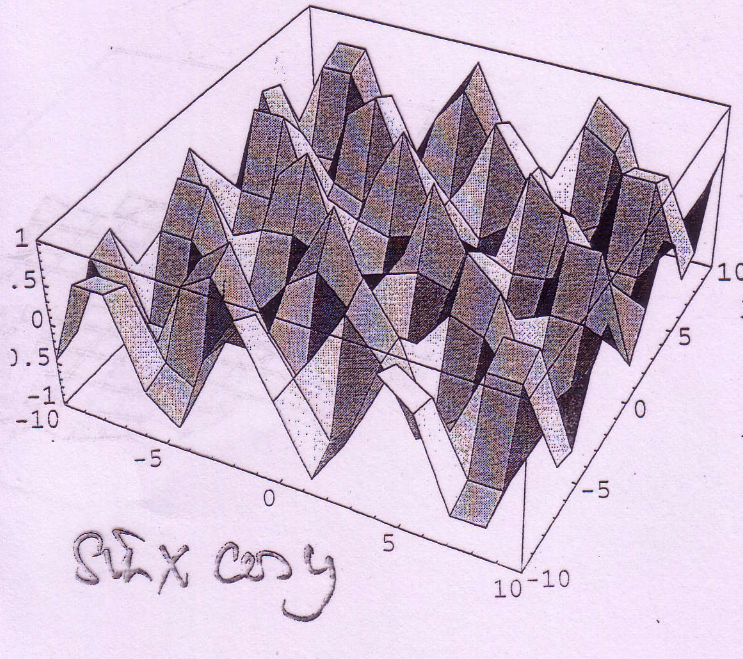
T3



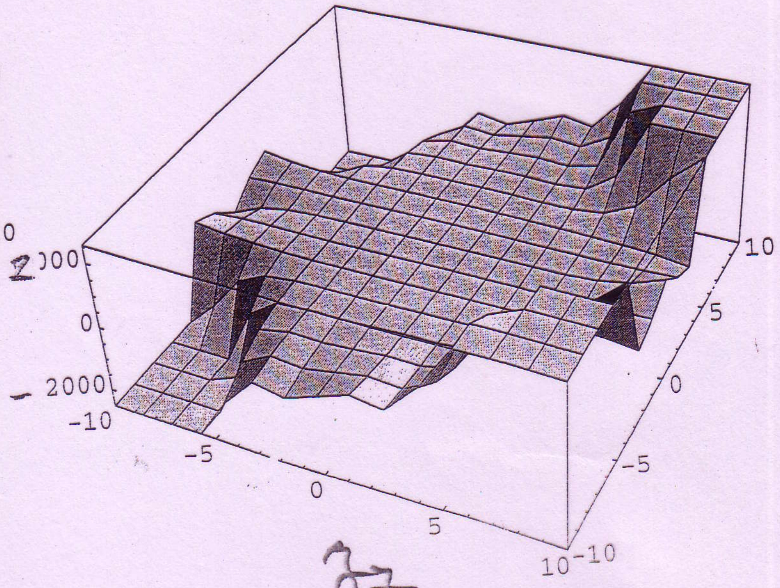
T5



T7



sin x cos y



T7

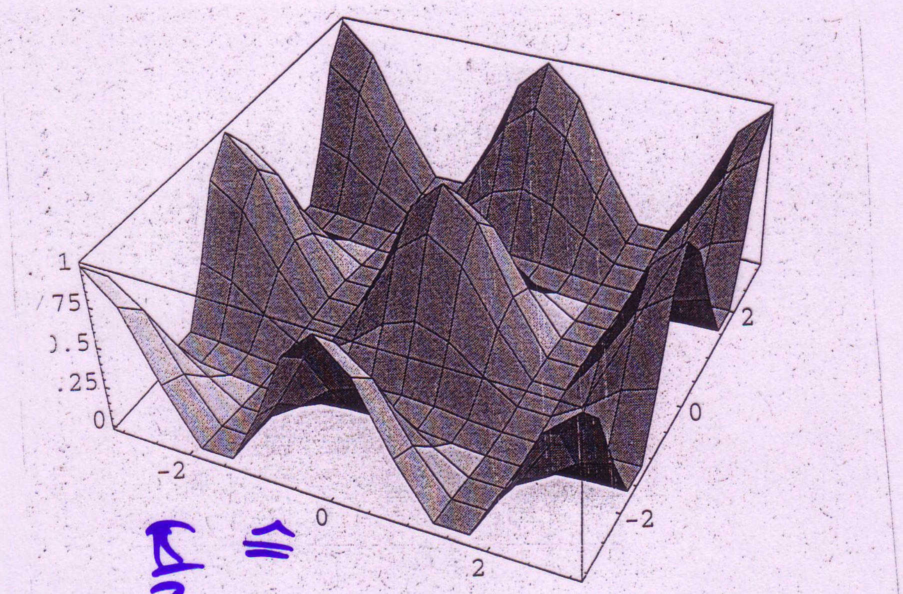
XIV Taylor-Regeln (3.2-3)

$$f(x,y) = \sin^2 x \cdot \cos^2 y \qquad P = \begin{pmatrix} \pi/2 \\ 0 \end{pmatrix}$$

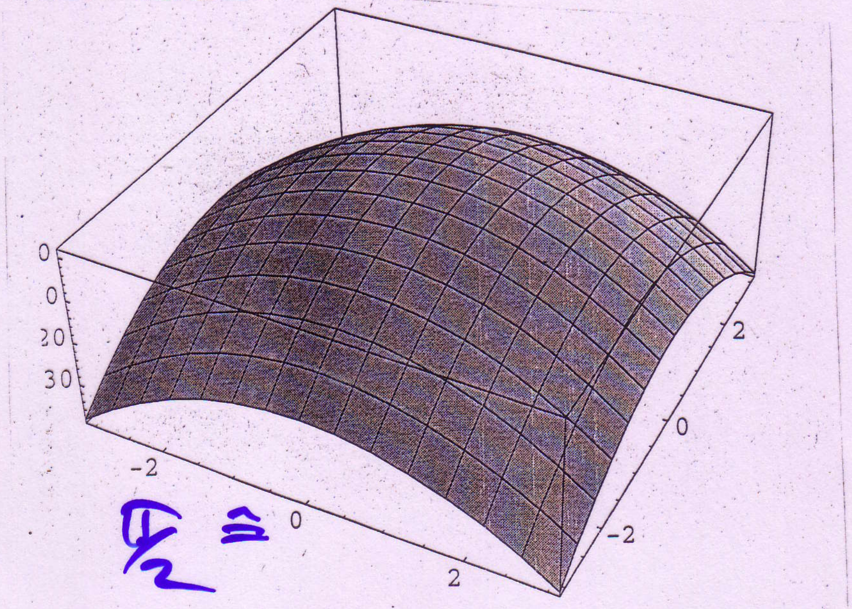
$$\sin(\pi/2 + h) = \cos h \approx_2 1 - h^2$$

$$f(\pi/2 + h, y) \approx_2 (1-h^2)^2 (1-y^2)^2 \approx_2 (1-2h^2)\cdot(1-2y^2)$$

$$\approx_2 1 - 2h^2 - 2y^2$$



$\frac{\pi}{2} \hat{=}$



$\frac{\pi}{2} \hat{=}$

```
In[31]:= Plot3D[Sin[Pi/2+h]^2*Cos[y]^2,{h,-Pi,Pi},{y,-Pi,Pi}]

Out[31]= -SurfaceGraphics-

In[32]:= Plot3D[1-2*h^2-2*y^2,{h,-Pi,Pi},{y,-Pi,Pi}]
```