

```
> read ('bsp_VII_3.mws');
```

```
  a := -3
```

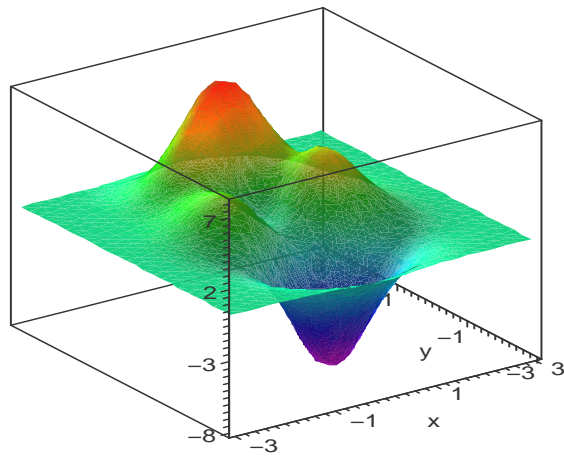
```
  b := 3
```

```
  c := -3
```

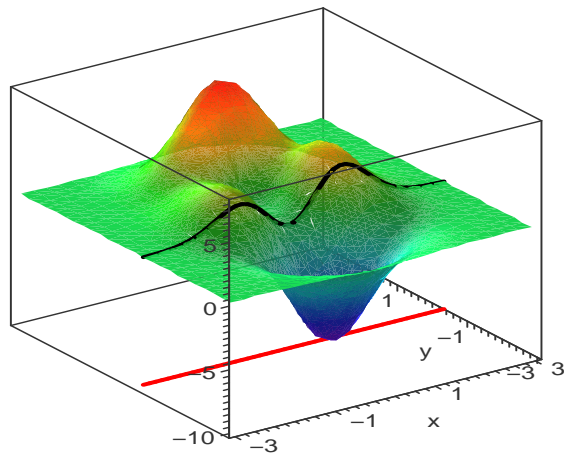
```
  d := 3
```

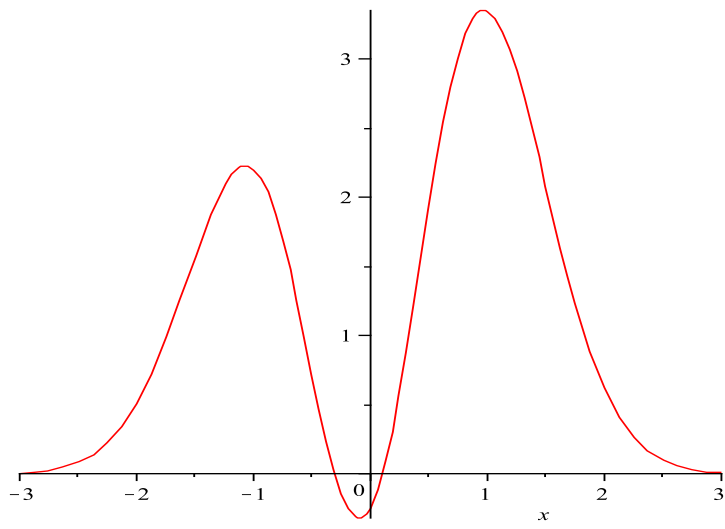
$$f := 10 (x^2 + y^5 + 1/5 x) e^{-x^2 - y^2}$$

Graph von f

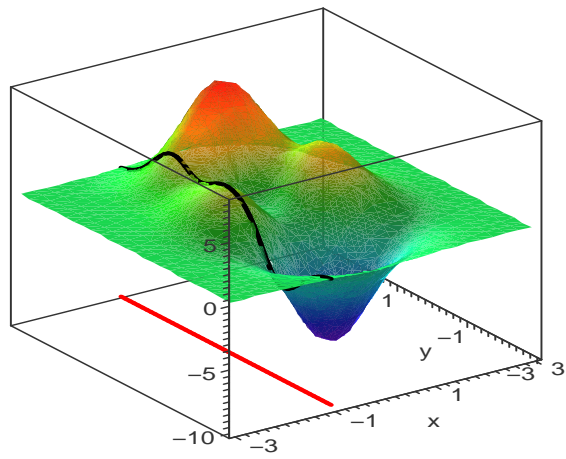


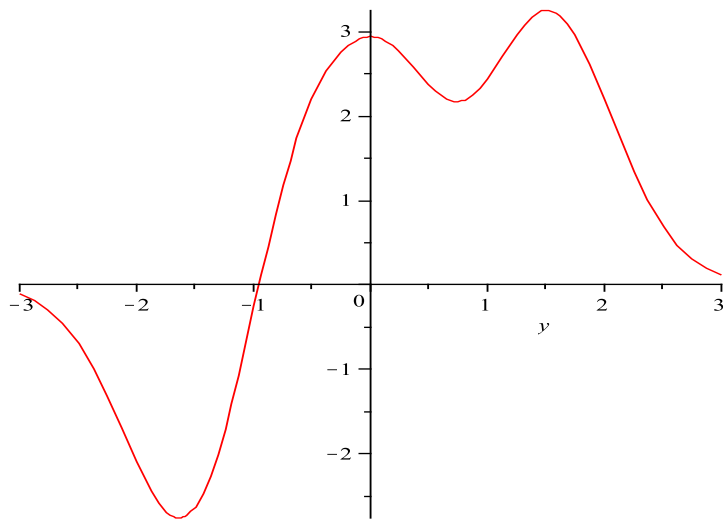
Schnitt fuer y=-1/2





Schnitt fuer $x=-1$





“Die partiellen Ableitungen erster und zweiter Ordnung von f ”

$$f_x := -2e^{-x^2-y^2}(-10x - 1 + 10x^3 + 10xy^5 + 2x^2)$$

$$f_y := -2ye^{-x^2-y^2}(-25y^3 + 10x^2 + 10y^5 + 2x)$$

$$f_{xx} := 4e^{-x^2-y^2}(-25x^2 - 3x + 10x^4 + 10x^2y^5 + 2x^3 + 5 - 5y^5)$$

$$f_{xy} := 4ye^{-x^2-y^2}(-10x - 1 + 10x^3 + 10xy^5 + 2x^2 - 25y^3x)$$

$$f_{yx} := 4ye^{-x^2-y^2}(-10x - 1 + 10x^3 + 10xy^5 + 2x^2 - 25y^3x)$$

$$f_{yy} := 4e^{-x^2-y^2}(50y^3 - 5x^2 - 55y^5 - x + 10y^2x^2 + 10y^7 + 2y^2x)$$