

```
In[14]:= SetDirectory[$HomeDirectory<> "/tools/math/didat/ca"]
```

```
Out[14]= /Users/sartoret/tools/math/didat/ca
```

```
In[15]:= (* limiti funzioni di due variabili *)
```

```
In[16]:= f[x_, y_] = (x*y + x + y + y^2) / (y + 1)
```

```
Out[16]= 
$$\frac{x + y + x y + y^2}{1 + y}$$

```

```
In[17]:= (* f coincide con x+y, tranne se y+1=0 → lim f=lim (x+y).
```

```
Consideriamo il lim {x→4,y→-1} f(x,y)
```

```
Mathematica NON calcola limiti di funzioni di due variabili *)
```

```
In[18]:= lim = Limit[f[x, y], {x → 4, y → -1}]
```

```
Out[18]= {4 + y, -1 + x}
```

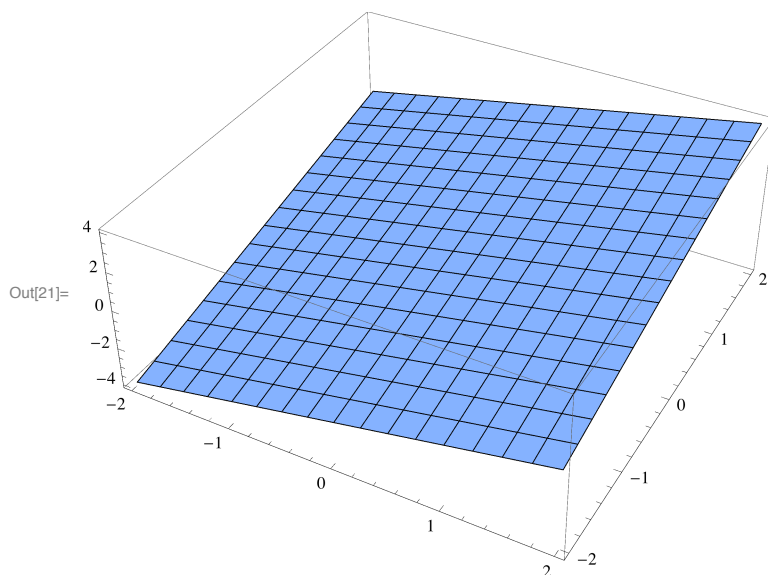
```
In[19]:= g[x_, y_] = x + y
```

```
Out[19]= x + y
```

```
In[20]:= g[4, -1]
```

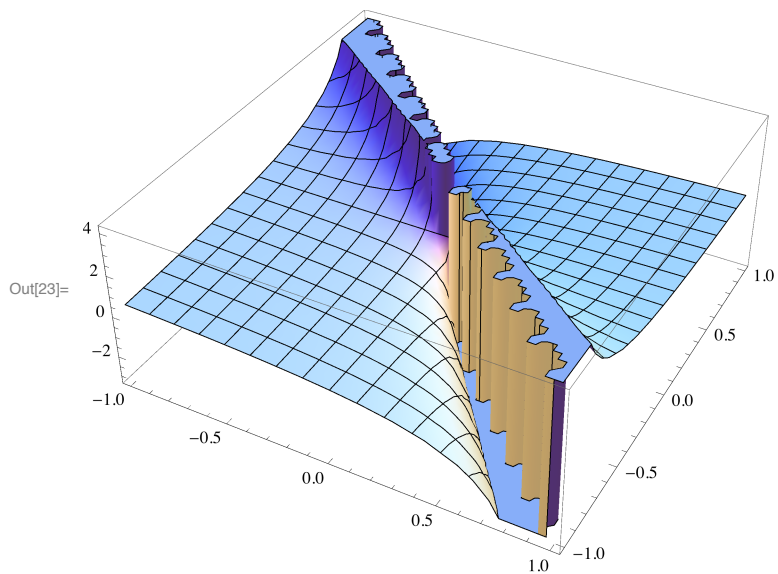
```
Out[20]= 3
```

```
In[21]:= plt2 = Plot3D[f[x, y], {x, -2, 2}, {y, -2, 2}]
```

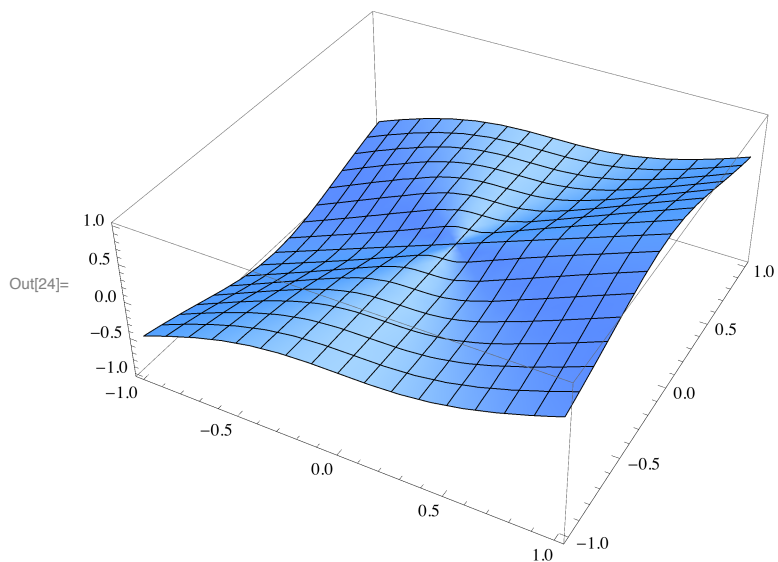


```
In[22]:= (* studiare il Lim P → 0 delle seguenti funzioni *)
```

```
In[23]:= plt3 = Plot3D[x / (x + y), {x, -1, 1}, {y, -1, 1}]
(* il limite non esiste. Suggerimento: provare con y = m x *)
```



```
In[24]:= plt5 = Plot3D[x^3 / (x^2 + y^2), {x, -1, 1}, {y, -1, 1}]
(* Il limite e' 0. Suggerimento: usare il teorema del confronto. *)
```



```
In[25]:= plt4 = Plot3D[x * y^2 / (x^2 + y^4), {x, -1, 1}, {y, -1, 1}]  
(* il limite non esiste. Suggerimento: usare y = m x e x = y^2 *)
```

