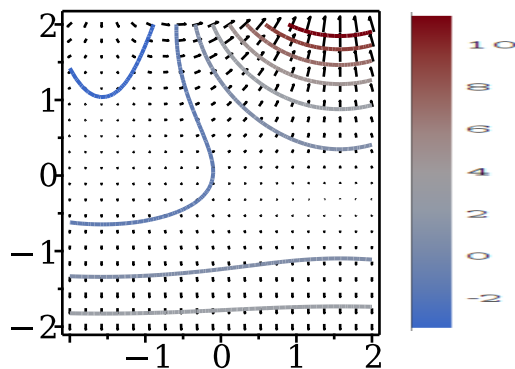


```

> restart : with(LinearAlgebra) : with(VectorCalculus) : with(plots) :
  with(plottools) :
  SetCoordinates(cartesian[x,y]) :
> f := (x,y)→sin(x)·exp(y) + y2 :
> gradient := Gradient(f(x,y)) :
> fig1:=gradplot(f(x,y),x=-2..2,y=-2..2,      axes=boxed,scaling=
constrained):
> display(fig1):
>
> # ii)
>
> solve(f(x,y) = c, x) :
> fig2 := contourplot(f(x,y), x=-2..2, y=-2..2, axes = boxed, scaling
  = constrained) :
  display(fig2) :
>
> # Now simply display them together
> display(fig1,fig2)

```



```

> # Here we confirmed that the gradient is pointing to the rising direction
> # iv)
> gradient_adapted_1 := cos(1)·exp(1) :
>
> gradient_adapted_2 := sin(1)·exp(1) + 2
  gradient_adapted_2 := sin(1) e + 2

```

(1)

```
|> angle := convert( evalf( arctan(  $\frac{\text{gradient\_adapted\_2}}{\text{gradient\_adapted\_1}}$  ) ), degrees )
|
|>
|>
```

(2)