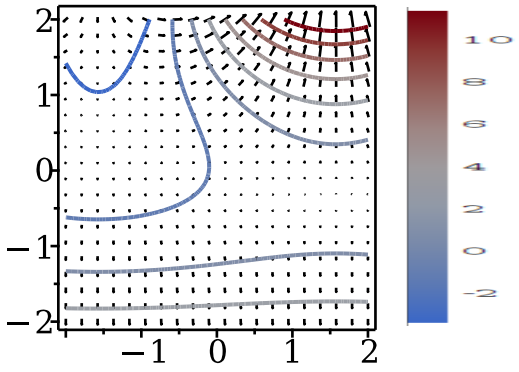
```
> restart : with(LinearAlgebra) : with(VectorCalculus) : with(plots) :
      with(plottools) :
  SetCoordinates(cartesian[x, y]) :
> f := (x, y)→sin(x)·exp(y) + y^2 :
> gradient := Gradient(f(x, y)) :
> fig1:=gradplot(f(x,y),x=-2..2,y=-2..2,      axes=boxed,scaling=
  constrained):
> display(fig1):
>
> # 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)
```

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

$$angle := 71.09038174\, degrees \quad (2)$$

>

>