Mat 105 Sections 201/202

Ex sheet 1

① (From exam 2013): Find the equation of the plane parallel to the plane $Q: -2x+y=3z+1$ and passes through $(-1,1,2)$.

② (From exam 2012): Find the equation of the plain parallel to $Q: 3x-y+4z=13$ and passing through $(2,1,-1)$.

③ (From exam 2014) Let $f(x,y)=\frac{\pi x^2 y}{3}$. plot the level curve $f(x,y)=\pi$

④ (From exam 2012): Identify and sketch the level curve at $z=e$ of the function $z=e^{x^2+4y^2}$. What is the mathematical term for this curve (parabola/elipse/circle/hyperbola)?

⑤ (Twist of a question from exam 2011): Sketch plots of the following surfaces: ⓐ $z=x^2+y^2$ ⓒ $x^2+y^2+z^2=1$

ⓑ $z=x^2-y^2$ ⓓ $z^2=x^2+y^2$

Which of them has trace at $x=0$ that looks like: