1.Find $\dfrac{\lim\limits_{x \to -3} \sqrt{x^2-2}}{(3x^3-17)}$　　(10%).

2.If f is the identity function defined by $f(x)=x$ then $D_x x = 1$ (10%).

3.Find the equation of the tangent to the hyperbola $4x^2 - 9y^2 = 36$ at the point $(6, 2\sqrt{3})$ (15%).

4.Find value of the function $\displaystyle\int_0^4 \dfrac{4}{\sqrt{x^2+9}}\,dx$ (10%).

5.Differentiate $y = \dfrac{\sqrt{1-x^2}}{(x+1)^{\frac{2}{3}}}$ and simplify the result. (10%).

6.Solve the system

$$x + 3y - 2z = 11$$
$$4x - 2y + z = -15$$
$$3x + 4y - z = 3$$

by Cramer's rule. (20%).

7.If $f(x,y,z) = x^3 e^{y+z} - y\sin(x-z) = 0$ defines z implicitly as a function of x and y in some rectangular domain, find $\dfrac{\partial z}{\partial x}$ and $\dfrac{\partial z}{\partial y}$ (25%).