

NAME – SURNAME :  
NUMBER :

15.01.2020

**DIFFERENTIAL EQUATIONS  
MAKE UP EXAM**

1) Evaluate  $\int \frac{\sin(\tan(x))}{\cos^2(x)} dx$  (20 pn)

2) Evaluate  $\int \tan^3(x) \sec(x) dx$  (25 pn)

3) Evaluate  $\int \frac{x^3}{\sqrt{4x^2-1}} dx$  (25 pn)

4) Calculate the partial derivative  $\partial f / \partial x$  by using the limit definition for the following function :

$$f(x, y) = \frac{x^2 y}{y + x^2} \quad (30 \text{ pn})$$

**Duration : 70 min.**