

## Small project - Quadrature

**1.** Compare the performance (cpu and accuracy) of the routines *quad* and *quadl* provided by Matlab for the integrand  $f(x) = x^a(1.2 - x)(1 - e^{b(x-1)})$  for  $x \in [0, 1]$

Choose the parameters as, say

i/  $a = 2$ ,  $b = 0.2$  producing a well-behaved (smooth) function,

ii/  $a = 0.1$ ,  $b = 20$  producing a difficult to integrate function.

**2.** Use Matlab routine *dblquad* on the integrand  $f(r) = \sin(r)/r$ , so called *sinc* function on the whole x-y plane.