(1) Evaluate the integrals
(a) (Final, 2013) \( \int_1^3 (2x - 1)e^{x^2 - x} \, dx = \)

(b) (Final, 2012) \( \int_0^3 (x + 1)\sqrt{9 - x^2} \, dx = \)
(2) Area between curves
(a) (Final, 2011) Find the total area of the finite region lying between the curves \( y = x \) and \( y = x^3 \).

(b) (Final, 2014) Find the area of the finite region bounded between the two curves \( y = \sqrt{2} \cos \left(\frac{x\pi}{4}\right) \) and \( y = |x| \). It will be useful to sketch the region first.