1.– Find the area enclosed by the curves.

a) $y = x^{5/3};\ x = 1;\ x = 8;\ y = 0.$
b) $y = 4x - x^2;\ y = 0;\ x = 1;\ x = 3.$
c) $x = 1 + y^2;\ x = 10.$
d) $y = 9 - x^2;\ y = x + 3.$
e) $y = x^2 - 4;\ y = 8 - 2x^2.$
f) $y = x^4 - 4x^2;\ y = 4x^2.$
g) $y = e^x;\ y = e^{-x};\ x = 0;\ x = 2.$
h) $xy = 12;\ x = 0;\ y = 1;\ y = e^2.$
i) $y = \dfrac{1}{1 + x^2};\ y = 0;\ x = \pm 1.$
j) $y = 0;\ y = \tan x;\ x = 0;\ x = \pi/4.$
k) $y = \sqrt{x};\ y = x^3.$
l) $y = x^{1/3};\ y = x^2.$

2.– Find the following areas:

a) Interior to $\rho = \cos 4\theta$.

b) Interior to $\rho = 1 + \sin\theta$.

c) Interior to $\rho^2 = a^2 \cos 2\theta$.

d) Interior to $\rho = a \cos 3\theta$.

e) Interior to $\rho = 1 + \cos\theta$ and exterior to $\rho = 1$.

f) Common to $\rho = 3\cos\theta$ and $\rho = 1 + \cos\theta$.

3.– Find the area enclosed by:

a) Axis $y = 0$ and the curve given in paramétrics by $x = t - \sin t;\ y = 1 - \cos t;\ t \in [0, 2\pi]$.

b) The curve $x = 3 + \cos t;\ y = 4\sin t$.

c) The curve in parametrics: $x = a\cos t,\ y = b\sin t$.

d) Axis OX and the curve $x = \sqrt{t},\ y = \sqrt{t}\sin t;\ t \in [0, \pi]$.

e) The curves $y = 9 - x^2;\ 64x = y^2;\ y = 2x^2$ on the first quadrant.

f) The curve $y^2 - x^2 + x^4 = 0$.
