1.– Obtain the primitives of the following functions:

a) $\displaystyle\int \frac{3x^2+5x-2}{(x^2+x)(x^2+x-6)}\,dx$

b) $\displaystyle\int \frac{5x^2+42x-5}{(2x+1)(x^2+5x-6)}\,dx$

c) $\displaystyle\int \frac{2x+1}{x^3+5x^2-x-5}\,dx$

d) $\displaystyle\int \frac{x^2}{x^3+3x^2+3x+1}\,dx$

e) $\displaystyle\int \frac{3x+1}{x^2(x+1)^2}\,dx$

f) $\displaystyle\int \frac{x^4}{(x^2-1)^2}\,dx$

g) $\displaystyle\int \frac{3x^3-4x^2+3x-1}{x^3(x-1)^2}\,dx$

h) $\displaystyle\int \frac{x^4-6x^3+12x^2+6}{x^3-6x^2+12x-8}\,dx$

i) $\displaystyle\int \frac{x-4}{x^3+4x^2+4x}\,dx$

j) $\displaystyle\int \frac{1}{x^3(1-x^2)}\,dx$

2.– Integrate the following functions:

a) $\displaystyle\int \frac{3x^2+5x+5}{x^3+2x^2+5x}\,dx$

b) $\displaystyle\int \frac{1}{x^3+1}\,dx$

c) $\displaystyle\int \frac{x^4}{x^4-1}\,dx$

d) $\displaystyle\int \frac{x^3+x+1}{x(x^2+1)}\,dx$

e) $\displaystyle\int \frac{x^2}{(x+1)^2(x^2+1)}\,dx$

f) $\displaystyle\int \frac{2x^2+x+1}{x^5+x^3}\,dx$

g) $\displaystyle\int \frac{1}{x^4+1}\,dx$

h) $\displaystyle\int \frac{1}{x^4+x^2+1}\,dx$

3.– Solve the following integrals, depending on the values of the parameters:

a) $\displaystyle\int \frac{1}{(x^2+2)(x+b)}\,dx$

b) $\displaystyle\int \frac{x}{(x^2+a^2)(x^2+1)}\,dx$

c) $\displaystyle\int \frac{1}{(x-a)(x+1)}\,dx$

d) $\displaystyle\int \frac{2}{x^2+2bx}\,dx$

4.– Solve the following integrals:

a) $\displaystyle\int \frac{5x}{(1-x^2)^8}\,dx$

b) $\displaystyle\int \frac{x^3+x}{(1+x^2)^7}\,dx$

c) $\displaystyle\int \frac{1}{x^4(1+x^2)}\,dx$

d) $\displaystyle\int \frac{1}{x^4(x^6+1)}\,dx$

e) $\displaystyle\int \frac{x^3}{(x^2-1)^6}\,dx$

f) $\displaystyle\int \frac{x^3}{(1+x^2)^{10}}\,dx$

g) $\displaystyle\int \frac{x^2}{(1+x^2)^2}\,dx$

h) $\displaystyle\int \frac{x^3}{(1+x^2)^2}\,dx$
