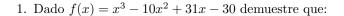
Cálculo Integral - Actividad 1

Resolver los siguientes ejercicios de forma analítica y comprobar los resultados con Python.



(a)
$$f(0) = -30$$

(b)
$$f(2) = 0$$

(c)
$$f(3) = f(5)$$

(d)
$$f(1) > f(-3)$$

(e)
$$f(-1) = -6f(6)$$

2. Si
$$f(x) = x^3 - 3x + 2$$
 encuentre:

(a)
$$f(0)$$

(b) f(-1)

(f)
$$f(y) = y^3 - 10y^2 + 31y - 30$$

(g)
$$f(a) = a^3 - 10a^2 + 31a - 30$$

(h)
$$f(yz) = y^3z^3 - 10y^2z^2 + 31yz - 30$$

(i)
$$f(x-2) = x^3 - 16x^2 + 83x - 140$$

(c)
$$f(-\frac{1}{2})$$

(d)
$$f(1\frac{1}{3})$$

3. Si
$$f(x) = x^3 - 10x^2 + 31x - 30$$
 y $\phi(x) = x^4 - 55x^2 - 210x - 216$ demuestre que:

(a)
$$f(2) = \phi(-2)$$

(c)
$$f(5) = \phi(-4)$$

(b)
$$f(3) = \phi(-3)$$

(d)
$$f(0) + \phi(0) + 246 = 0$$

4. Si
$$F(x) = 2^x$$
, encuentre:

(a)
$$F(0)$$

(b) F(-3)

(c)
$$F(\frac{1}{3})$$

(d)
$$F(-1)$$

$$\mathbf{u}) = \mathbf{r}(-\mathbf{r})$$

5. Si
$$f(x) = (2x-3)/(x+7)$$
 encuentre el valor de $f(\sqrt{2})$.

(d) ______

(c) _____

6. Dado
$$F(x) = x(x-1)(x+6)(x-\frac{1}{2})(x+\frac{5}{4})$$
, demuestre que:

(a)
$$F(0) = F(1) = F(-6) = F(\frac{1}{2}) = F(-\frac{5}{4}) = 0$$

7. Si
$$f(m_1) = (m_1 - 1)/(m_1 + 1)$$
 demuestre que:

$$\frac{f(m_1) - f(m_2)}{1 + f(m_1)f(m_2)} = \frac{m_1 m_2}{1 + m_1 m_2}$$