Aproximación

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Input

In [ ]:
```
#expression = "2*x**3 - 4*log(x)"
#expression = "x**(1/3)"
expression = "x**3*log(x)"
```

Method

In [ ]:
```
f = Taylor(expression, 3, 2)
print("\n", f, "\n")
print("f(x) ≈", N(f.subs(x, 2.1)))
```

Taylor

In [ ]:
```
def Taylor(function, order, a = 0):
    d, fS = [parse_expr(expression)], ""
    for i in range(order + 1):
        if i > 0:
            d.append(diff(d[i-1], x))
            fS += " + "
        print("\t", d[i])
        fS += str(N(d[i].subs(x, a))) + "*(x - " + str(a) + ")**" + str(i) + "/(" + str(i) + "!)"
    return collect(expand(parse_expr(fS)), x)
```

Run First

In [ ]:
```
from sympy import *
x = symbols("x")
```