

In [125... `from qmul import *`

In [126... `x = sympy.Symbol('x')`

In [127... `eq = (7*x**1.5)`
`eq`

Out[127... $7x^{1.5}$

In [128... `coeffExp = eq.as_coeff_exponent(x)`
`coeffExpFrac = [Fraction(str(eqNum)).as_integer_ratio() for eqNum in coeffExp]`
`coeffExpFrac`

Out[128... `[(7, 1), (3, 2)]`

Add 1 due to integration

In [129... *# Add by a value equal to the denominator of the 2nd/Divisor Fraction (e.g. if denom*

```

factors = np.transpose(coeffExpFrac)
denominator = factors[1, 1]
print(denominator)

# factors[:, 1][0] is the Numerator of the 2nd Fraction
factors[:, 1][0] += denominator
print(repr(factors))

```

2
array([[7, 5],
 [1, 2]])

Fraction division is a multiplication by its reciprocal of the 2nd/Divisor Fraction

In [130... `factors[:, 1] = factors[:, 1][::-1]`
`print(repr(factors))`

array([[7, 2],
 [1, 5]])

In [131... `result = []`

```

for A, B in factors:
    # Set the Inputs by using setInputs()
    setInputs(A, B)

```

```
# Execute the Circuit by using execCirc()
resultMul = execCirc()
result.append(resultMul)
print(f'Expression: {A}*{B} = {resultMul}')
```

Expression: 7*2 = 14

Expression: 1*5 = 5

In [132...

```
# New Coefficient for the integrated expression
integCoef = Fraction(result[0], result[1])
integCoef
```

Out[132...

Fraction(14, 5)

In [133...

```
# New Exponent for the integrated expression
integExp = coeffExpFrac[1][0]+1
integExp
```

Out[133...

4

In [134...

```
integCoef*x**integExp
```

Out[134...

$$\frac{14x^4}{5}$$