```
from sympy import *
import math
import sympy as sp
th, al, a, d, th0, th1, th2, th3, th4, th5 = symbols('theta alpha a d theta0 theta1
theta2 theta3 theta4 theta5', real=True)

#please give all the inputs in degrees in place of the zero for all the thetas
#please uncomment all below lines to get the simplified version of all matrices
(teta not equal to zero)
# th0 = 0
# th1 = 0
# th2 = 0
# th3 = 0
# th4 = 0
# th5 = 0

# converts the theta value into radians
# th0 = sp.rad(th0)
# th1 = sp.rad(th1)
# th2 = sp.rad(th2)
# th3 = sp.rad(th3)
# th4 = sp.rad(th4)
# th5 = sp.rad(th5)

"""To compute the DH parameters matrix"""
def Transformation_matrix(a, al, d, th):

    return Matrix([
        [sp.cos(th), -sp.sin(th) * sp.cos(al), sp.sin(th) * sp.sin(al), a *
sp.cos(th)],
        [sp.sin(th), sp.cos(th) * sp.cos(al), -sp.cos(th) * sp.sin(al), a *
sp.sin(th)],
        [0, sp.sin(al), sp.cos(al), d],
        [0, 0, 0, 1]
    ])
#Transformation matrix for T01
T1 = Transformation_matrix(0, sp.pi/2, 128, th0 + sp.pi)
print("T01\n")
pprint(T1, num_columns=10_000)
print("\n")

#Transformation matrix for T12
print("T12\n")
T2 = Transformation_matrix(-612.7, sp.pi, 0, th1 - sp.pi/2)
pprint(T2, num_columns=10_000)
print("\n")

#Transformation matrix for T23
print("T23\n")
T3 = Transformation_matrix(-571.6, sp.pi, 0, th2 + 0)
pprint(T3, num_columns=10_000)
print("\n")

#Transformation matrix for T34
print("T34\n")
T4 = Transformation_matrix(0, -sp.pi/2, 163.9, th3 + sp.pi/2)
pprint(T4, num_columns=10_000)
print("\n")
```

```
#Transformation matrix for T45
print("T45\n")
T5 = Transformation_matrix(0, sp.pi/2, 115.7, th4 )
pprint(T5, num_columns=10_000)
print("\n")

#Transformation matrix for T56
print("T56\n")
T6 = Transformation_matrix(0, 0, 92.2, th5)
pprint(T6, num_columns=10_000)
print("\n")

#Transformation matrix for T06
print("Tfinal")
print("\n")


Final_transformation = T1 * T2 * T3 * T4 * T5 * T6

print("Final Transformation Matrix:")
print("\n")
pprint(Final_transformation)
```