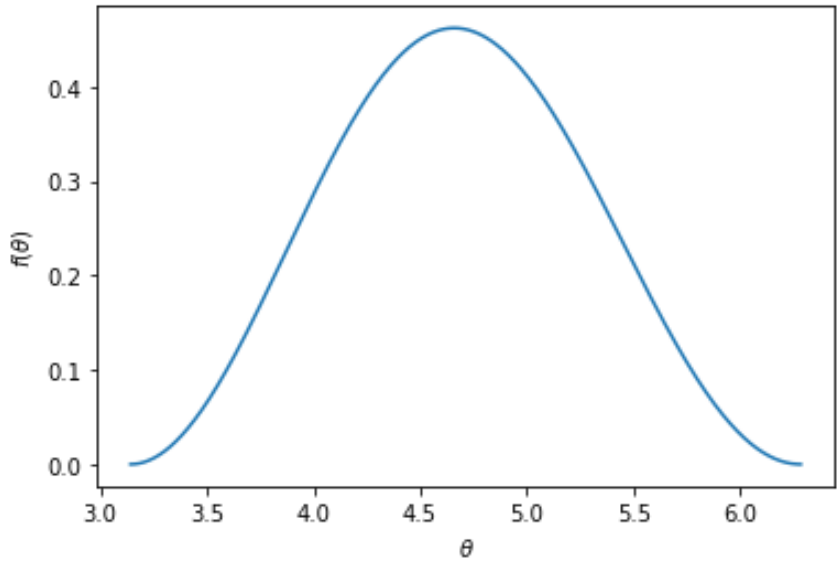
Plotting $y = sin^2(x)/sqrt(x)$ from $x = \pi \rightarrow 2\pi$

In [18]:
```
#import statements
import numpy as np
import matplotlib.pyplot as plt
#Defining x and y as arrays with 10000 elements
x = np.linspace(np.pi,2 * np.pi,10000)
y = (np.sin(x) ** 2)/(np.sqrt(x))
#Plotting y onto x
plt.plot(x,y)
plt.xlabel("$\\theta$")
plt.ylabel("$f(\\theta)$")
```

Out[18]:
```
Text(0, 0.5, '$f(\\theta)$')
```



The integral:

$$\int_{\pi}^{2\pi} \frac{\sin^2(x)}{x^{1/2}}\, dx$$

In [25]:
```
#Evalutating the Integral
result = np.trapz(y,x)
print(result)
```

```
0.7276462173963167
```