In [5]:

```
# 연습문제 6 / 예제(5.25), p176
from scipy.stats import norm

mu = 6
sigma = 2.366
x = 5

# P(4.5 <= X <= 5.5)
prob = norm.cdf(x + 0.5, mu, sigma) - norm.cdf(x - 0.5, mu, sigma)
print(f"5대가 결점이 있을 확률 : {round((prob), 4)}")
```

```
5대가 결점이 있을 확률 : 0.1533
```

In [7]:

```
# 연습문제 6-1 / 예제(5.25), p176 + 시각화
import matplotlib.pyplot as plt
import numpy as np
from scipy.stats import norm

mu = 6
sigma = 2.366
x = np.linspace(mu - 4 * sigma, mu + 4 * sigma, 1000)
y = norm.pdf(x, mu, sigma)

fig, ax = plt.subplots()
ax.plot(x, y)
ax.fill_between(x, y, where=(4.5 <= x) & (x <= 5.5), color='red', alpha=0.2)
ax.set_xlabel('X')
ax.set_ylabel('P(X)')
ax.set_title('P(4.5 <= X <= 5.5) / P(-0.66 <= Z <= - 0.22)')

plt.show()
```