```
In [5]:
# 연습문제 6 / 예제(5.25), p176
from scipy.stats import norm
mu = 6
sigma = 2.366
x = 5
\#P(4.5 \le X \le 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 \le x) & (x \le 5.5), color='red', alpha=(0.2)
ax.set xlabel('X')
ax.set ylabel('P(X)')
ax.set title('P(4.5 \le X \le 5.5) / P(-0.66 \le Z \le -0.22)')
plt.show()
                    P(4.5 \le X \le 5.5) / P(-0.66 \le Z \le -0.22)
    0.175
    0.150
    0.125
    0.100
    0.075
    0.050
    0.025
```

0.000

-2.5

0.0

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2.5

5.0

7.5

10.0

12.5

15.0