In [8]:

```
# 연습문제 4 / 예제(5.21), p173
from scipy.stats import norm

mu    = 50  # 평균
sigma = 10  # 표준편차

# P(60 < X < 65)
prob = norm.cdf(65, mu, sigma) - norm.cdf(60, mu, sigma)

print(f"P(60 < X < 65) = {prob}")
```

P(60 < X < 65) = 0.09184805266259899

In [1]:

```
# 연습문제 4 - 그래프 출력하기 / 예제(5.21), p173
import matplotlib.pyplot as plt
import numpy as np
from scipy.stats import norm

mu    = 50  # 평균
sigma = 10  # 표준편차

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

# P(60 < X < 65)
x_fill = np.linspace(60, 65, 100)
y_fill = norm.pdf(x_fill, mu, sigma)

plt.plot(x, y)
plt.fill_between(x_fill, y_fill, alpha=0.5)
plt.title("P(60 < X < 65)")
plt.axvline(60, color="red", linestyle="--")
plt.axvline(65, color="red", linestyle="--")
plt.show()
```