```python
import numpy as np
from math import sqrt
from scipy.stats import norm


x_bar = 51.2
mu_0 = 50
sigma = 3
n = 36


z_stat = (x_bar - mu_0) / (sigma / sqrt(n))


p_value = 2 * (1 - norm.cdf(abs(z_stat)))


print(f"Z-statistic: {z_stat:.3f}")
print(f"P-value: {p_value:.4f}")


alpha = 0.05


if p_value < alpha:
    print("Reject Null Hypothesis → Mean is significantly different from 50 g.")
else:
    print("Fail to Reject Null Hypothesis → No significant difference.")
```

```
Z-statistic: 2.400
P-value: 0.0164
Reject Null Hypothesis → Mean is significantly different from 50 g.
```