LINEAR REGRESSION

```
import matplotlib.pyplot as plt

# Data
x = [1, 2, 3, 4, 5]
y = [2, 4, 5, 4, 5]

# Find slope (m) and intercept (c)
mean_x = sum(x) / len(x)
mean_y = sum(y) / len(y)
m = sum((a - mean_x) * (b - mean_y) for a, b in zip(x, y)) / sum((a - mean_x)**2 for a in x)
c = mean_y - m * mean_x

# Prediction
x_test = 6
y_pred = m * x_test + c

# Results
print(f"Line: y = {m:.2f}x + {c:.2f}")
print(f"Predicted y for x={x_test}: {y_pred:.2f}")

# Plot
plt.scatter(x, y, color='blue')
plt.plot(x, [m * xi + c for xi in x], color='red')
plt.scatter(x_test, y_pred, color='green')
plt.show()
```