```
import numpy as np
from scipy import stats

# Data for three groups
medication = [9, 10, 12, 13, 15]
exercise = [0, 2, 3, 6, 8]
diet = [4, 5, 8, 9, 12]
```

```
print("BLOOD PRESSURE REDUCTION ANALYSIS")
print()
print("SUMMARY STATISTICS")
print(f"Medication Group: Mean = {np.mean(medication):.2f}, SD = {np.std(medication, ddof=1):.2f}")
print(f"Exercise Group:   Mean = {np.mean(exercise):.2f}, SD = {np.std(exercise, ddof=1):.2f}")
print(f"Diet Group:       Mean = {np.mean(diet):.2f}, SD = {np.std(diet, ddof=1):.2f}")
print()
print("ONE-WAY ANOVA")
f_stat, p_value = stats.f_oneway(medication, exercise, diet)
print(f"F-statistic: {f_stat:.4f}")
print(f"P-value: {p_value:.4f}")
```

```
BLOOD PRESSURE REDUCTION ANALYSIS

SUMMARY STATISTICS
Medication Group: Mean = 11.80, SD = 2.39
Exercise Group:   Mean = 3.80, SD = 3.19
Diet Group:       Mean = 7.60, SD = 3.21

ONE-WAY ANOVA
F-statistic: 9.1679
P-value: 0.0038
```

```
if p_value < 0.05:
    print("Result: SIGNIFICANT difference between groups")
else:
    print("Result: NO significant difference between groups")
print()
print("PAIRWISE T-TESTS")
print()
print("1. Medication vs Exercise:")
print(f"   t-statistic = {t_stat1:.4f}, p-value = {p_val1:.4f}")
if p_val1 < 0.05:
    print(f"   Result: SIGNIFICANT difference")
else:
    print(f"   Result: NO significant difference")
print()
print("2. Medication vs Diet:")
print(f"   t-statistic = {t_stat2:.4f}, p-value = {p_val2:.4f}")
if p_val2 < 0.05:
    print(f"   Result: SIGNIFICANT difference")
else:
    print(f"   Result: NO significant difference")
print()
print("3. Exercise vs Diet:")
print(f"   t-statistic = {t_stat3:.4f}, p-value = {p_val3:.4f}")
if p_val3 < 0.05:
    print(f"   Result: SIGNIFICANT difference")
else:
    print(f"   Result: NO significant difference")
print()
print("CONCLUSION")
if p_value < 0.05:
    print("The ANOVA test shows significant differences between groups.")
    print("Pairwise comparisons show:")
    if p_val1 < 0.05:
        print("  - Medication differs significantly from Exercise")
    if p_val2 < 0.05:
        print("  - Medication differs significantly from Diet")
    if p_val3 < 0.05:
        print("  - Exercise differs significantly from Diet")
else:
    print("No significant differences found between the groups.")
```

```
Result: SIGNIFICANT difference between groups

PAIRWISE T-TESTS

1. Medication vs Exercise:
   t-statistic = 4.4862, p-value = 0.0020
   Result: SIGNIFICANT difference

2. Medication vs Diet:
   t-statistic = 2.3479, p-value = 0.0468
   Result: SIGNIFICANT difference

3. Exercise vs Diet:
   t-statistic = -1.8767, p-value = 0.0974
   Result: NO significant difference

CONCLUSION
```

```
The ANOVA test shows significant differences between groups.
Pairwise comparisons show:
  - Medication differs significantly from Exercise
  - Medication differs significantly from Diet
```