es5-ws3

August 4, 2025

[3]:
```python
# NRCS Method Tools
import matplotlib.pyplot as plt # in case we need to plot

def nrcs_lag(L,Sr,Y):
    term1 = (Sr+1.0)**(0.7)
    term2 = 1140*Y**(0.5)
    term3 = L**(0.8)
    nrcs_lag = term3*term1/term2
    return nrcs_lag

# Problem 3
# NRCS Lag Equation
length = 500 # feet given
slope = 5 # percent given
retention = 0.5 # inches given
tc=nrcs_lag(length,retention,slope)
print("NRCS Lag Equation")
print(f"Length: {length:.2f} feets")
print(f"Slope: {slope:.2f} percent")
print(f"Retention Capacity: {retention:.2f} inches")
print(f"Time of concentration: {tc:.2f} hours")
```

```
NRCS Lag Equation
Length: 500.00 feets
Slope: 5.00 percent
Retention Capacity: 0.50 inches
Time of concentration: 0.08 hours
```

[ ]:
```python

```