**Matlab Test 2 – Oisin Mc Laughlin 22441106**

**Code:**

function growthSim

P0 = 100;

r = 0.1;

k\_values = [1000, 10000, 50000, 250000, 1000000];

timepoints = 0:1:100;

for i = 1:length(k\_values)

k = k\_values(i);

[t, p] = ode45(@(t, p) r \* p \* (1 - p / k), timepoints, P0);

results(:, i) = p;

end

plot(timepoints, results);

title('Population Growth Simulation');

xlabel('Time');

ylabel('Population');

end

**Graph:**

A graph with different colored lines

Description automatically generated