Output:

Section 1.1 Computer Problems:

Approximate Solution for Problem 1, Part A: 2.080083
Approximate Solution for Problem 1, Part B: 1.169726
Approximate Solution for Problem 1, Part C: 6.776092

1st Approximate Solution for Problem 3, Part A: −1.641783
Interval Used: [−2.5, −1.5]
2nd Approximate Solution for Problem 3, Part A: −0.168254
Interval Used: [−1, 0]
3rd Approximate Solution for Problem 3, Part A: 1.810038
Interval Used: [1, 2]
1st Approximate Solution for Problem 3, Part B: −1.023482
Interval Used: [−2, −1]
2nd Approximate Solution for Problem 3, Part B: 0.163822
Interval Used: [−0.7, 0.3]
3rd Approximate Solution for Problem 3, Part B: 0.788941
Interval Used: [0.7, 1.7]
1st Approximate Solution for Problem 3, Part C: −0.818094
Interval Used: [−1.7, −0.7]
2nd Approximate Solution for Problem 3, Part C: −0.000000
Interval Used: [−0.6, 0.4]
3rd Approximate Solution for Problem 3, Part C: 0.506308
Interval Used: [0.45, 1.45]

Section 1.2 Computer Problems:

Approximate Solution for Problem 1, Part A: 1.76929235
Approximate Solution for Problem 1, Part B: 1.67282170
Approximate Solution for Problem 1, Part C: 1.12998050

Approximate Fixed Point for Problem 5 after 1000 Iterations: r = 0.641714
Since |g'(r)| for fixed point r is 0.958993 < 1, FPI will locally converge at fixed
point r

Section 1.4 Computer Problems:

Approximate Solution for Problem 1, Part A: 1.76929235
Approximate Solution for Problem 1, Part B: 1.67282170
Approximate Solution for Problem 1, Part C: 1.12998050

f(x) = 27x^3 + 54x^2 + 36x + 8
Approximate Solution (Root) for Problem 3, Part A: −0.66666483
First Derivative of f(x) at Approximate Root: 0.00000000
Second Derivative of f(x) at Approximate Root: 0.00029716
Third Derivative of f(x) at Approximate Root: 162.00000000
Multiplicity of f(x) at Approximate Root: m = 3
Error Rate at Approximate Root: S = 2/3
|e_{i+1}| ~= 2/3|e_{i}|

f(x) = 36x^4 − 12x^3 + 37x^2 − 12x + 1
Approximate Solution (Root) for Problem 3, Part B: 0.16666667
First Derivative of f(x) at Approximate Root: 0.00000018
Second Derivative of f(x) at Approximate Root: 74.00000017
Multiplicity of f(x) at Approximate Root: m = 2
Error Rate at Approximate Root: S = 1/2
|e_{i+1}| ~= 1/2|e_{i}|