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}|