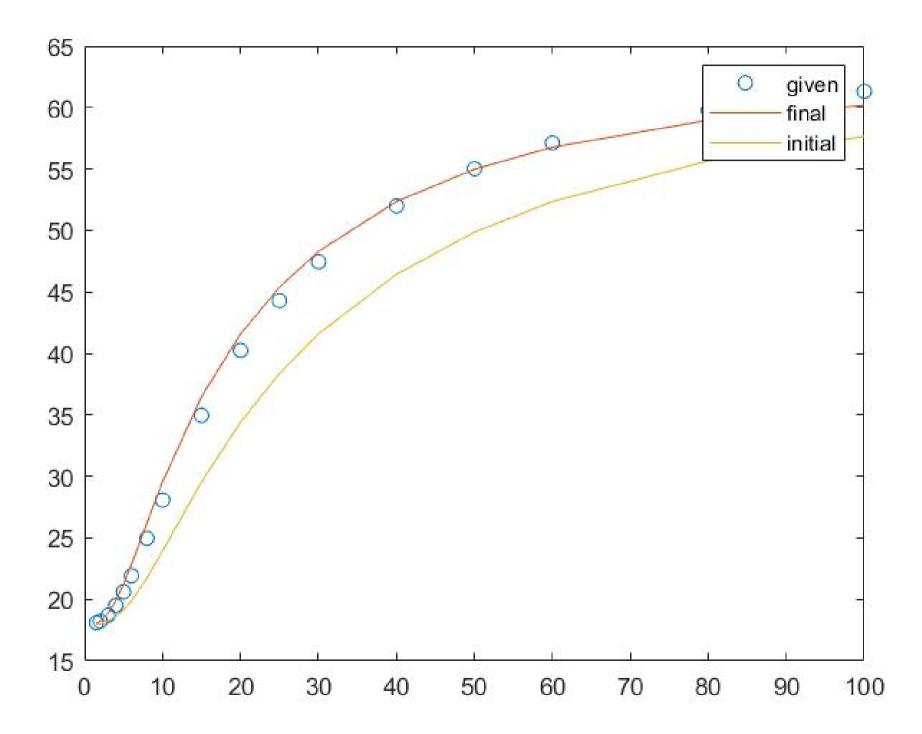
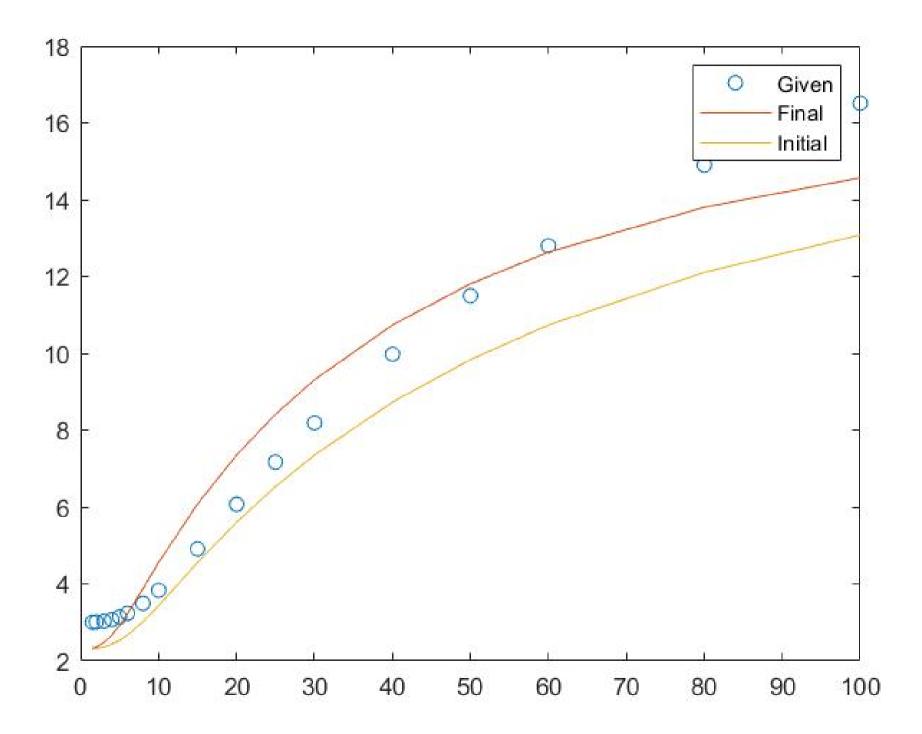
```
%18EX20030 UTKARSH JAISWAL
 2 -
       clear all
 3 -
       close all
       clc
 5 -
       X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
       given=[18.08 18.21 18.69 19.49 20.59 21.92 24.95 28.07 34.95 40.24 44.29 47.45 51.99 55.01 57.12 59.78 61.31];
 7 -
       plot(X, given, '0')
       hold on;
       h=4;
10 -
      p1 = 17.9;
11 - p2=63;
12 -
      K = (p2 - p1)/(p2 + p1);
13 - ☐ for i = 1:length(X)
14 -
       d = X(i)/h;
15 -
       s = 0;
16 - \bigcirc \text{for } n = 1:2000
      s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
17 -
18 -
19 -
       calculated(i) = p1*(1 + 2*s);
20 -
      end
       loglog(X, calculated);
21 -
22 -
       err=0;
23 - ☐ for i = 1:length(X)
       err=err+((given(i)-calculated(i))/given(i))^2;
24 -
25 - end
26 -
      final=100*((err/length(X))^0.5)
27 -
       final = 3.4230
28 -
       h=6;
29 -
       p1 = 17.9;
```

```
18 -
19 -
       calculated(i) = p1*(1 + 2*s);
20 -
21 -
       loglog(X, calculated);
22 -
       err=0;
23 - for i = 1:length(X)
24 -
        err=err+((given(i)-calculated(i))/given(i))^2;
25 -
       end
       final=100*((err/length(X))^0.5)
26 -
27 -
       final = 3.4230
28 -
       h=6;
29 -
       p1 = 17.9;
30 -
       p2=63;
31 -
       K = (p2 - p1)/(p2 + p1);
32 - ☐ for i = 1:length(X)
33 -
       d = X(i)/h;
34 -
       s = 0;
35 - \bigcirc \text{for } n = 1:2000
36 -
       s = s + (((d^3) * (K^n)) / ((d^2 + 4*(n)^2)^(1.5)));
37 -
38 -
       calculated(i) = p1*(1 + 2*s);
39 -
       end
40 -
       loglog(X, calculated);
41 -
       err=0;
42 - for i = 1:length(X)
43 -
        err=err+((given(i)-calculated(i))/given(i))^2;
44 -
       end
45 -
       initial=100*((err/length(X))^0.5)
46 -
       initial = 10.1898
47 -
       legend('given ','final ','initial')
```



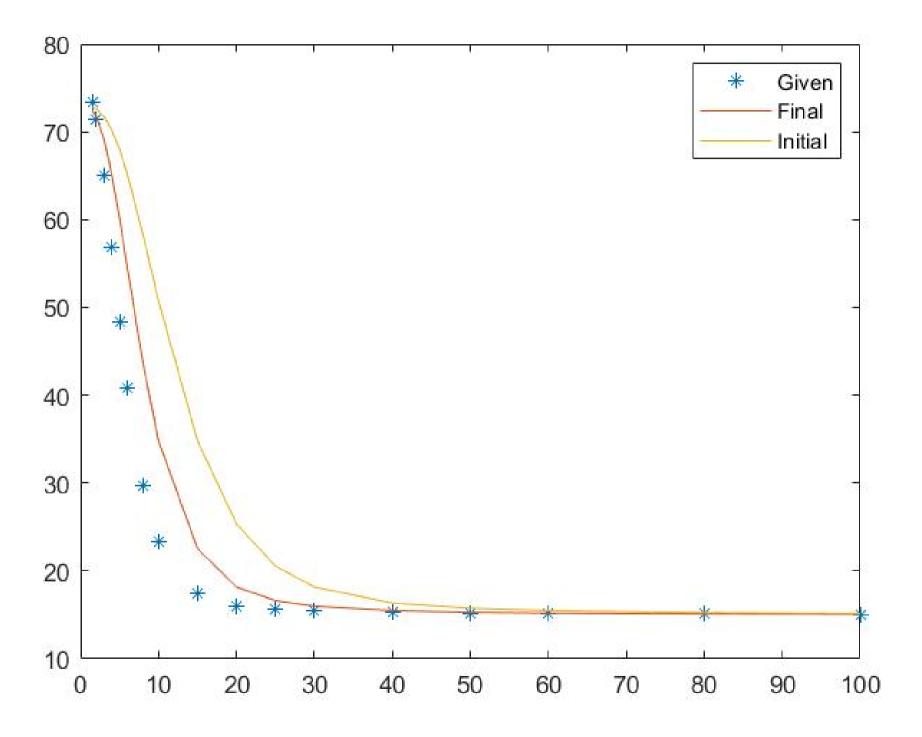
```
1
        %18EX20030 UTKARSH JAISWAL
 2 -
        clear all
        close all
 3 -
        clc
 4 -
       X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
        given=[3.00 3.01 3.03 3.07 3.14 3.23 3.49 3.83 4.91 6.07 7.17 8.19 9.98 11.50 12.80 14.90 16.51];
 7 -
       plot(X, given, 'o')
       hold on;
       h=4;
 9 -
       p1 = 2.30;
10 -
11 - p2=17;
      K = (p2 - p1)/(p2 + p1);
12 -
13 - \Box \text{ for } i = 1: \text{length}(X)
14 -
       d = X(i)/h;
15 -
       s = 0;
16 - \bigcirc \text{for } n = 1:2000
17 -
        s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
18 -
19 -
        calculated(i) = p1*(1 + 2*s);
20 -
21 -
       loglog(X, calculated);
22 -
       err=0;
23 - for i = 1:length(X)
24 -
        err=err+((given(i)-calculated(i))/given(i))^2;
25 -
       final=100*((err/length(X))^0.5)
26 -
27 -
       h=6;
28 -
       p1 = 2.3;
29 -
       p2=17;
```

```
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
18 -
       end
19 -
       calculated(i) = p1*(1 + 2*s);
20 -
21 -
       loglog(X, calculated);
22 -
       err=0;
23 - for i = 1:length(X)
        err=err+((given(i)-calculated(i))/given(i))^2;
24 -
25 -
       final=100*((err/length(X))^0.5)
26 -
27 -
      h= 6;
28 -
      p1 = 2.3;
29 -
      p2=17;
30 -
      K = (p2 - p1)/(p2 + p1);
31 - ☐ for i = 1:length(X)
32 -
       d = X(i)/h;
33 -
      s =0;
34 - \boxed{1} for n = 1:2000
       s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
35 -
36 -
37 -
       calculated(i) = p1*(1 + 2*s);
38 -
      end
39 -
       loglog(X, calculated);
40 -
       err=0;
41 - ☐ for i = 1:length(X)
        err=err+((given(i)-calculated(i))/given(i))^2;
42 -
43 -
44 -
       initial=100*((err/length(X))^0.5)
       legend('Given ', 'Final ', 'Initial')
45 -
```



```
%18EX20030 UTKARSH JAISWAL
 2 -
       clear all
 3 -
       close all
       clc
 4 -
       X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
       given=[73.34, 71.34, 65.03,56.84,48.42,40.86,29.75,23.32,17.41,16.04,15.61,15.42,15.27,15.21,15.17,15.11,15.07];
 7 -
       plot(X,given,'o')
 8 -
       hold on;
 9 -
       h=4;
       p1 = 73;
10 -
11 -
      p2=15;
12 -
      K = (p2 - p1)/(p2 + p1);
13 - ☐ for i = 1:length(X)
14 -
       d = X(i)/h;
15 -
       s = 0;
16 - for n = 1:2000
17 -
       s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
18 -
19 -
       calculated(i) = p1*(1 + 2*s);
20 -
21 -
       loglog(X, calculated);
22 -
       err=0;
23 - for i = 1:length(X)
24 -
        err=err+((given(i)-calculated(i))/given(i))^2;
25 -
       final=100*((err/length(X))^0.5)
26 -
27 -
       h= 6;
28 -
       p1 = 73;
29 -
       p2=15;
```

```
17 -
        s = s + (((d^3) * (K^n)) / ((d^2 + 4*(n)^2)^(1.5)));
18 -
        end
19 -
        calculated(i) = p1*(1 + 2*s);
20 -
       end
21 -
        loglog(X, calculated);
22 -
        err=0;
23 - ☐ for i = 1:length(X)
24 -
        err=err+((given(i)-calculated(i))/given(i))^2;
25 -
      end
26 -
        final=100*((err/length(X))^0.5)
27 -
       h=6;
28 -
       p1 = 73;
29 -
       p2=15;
30 -
        K = (p2 - p1)/(p2 + p1);
31 - \Box \text{ for } i = 1: \text{length}(X)
32 -
        d = X(i)/h;
33 -
        s = 0;
34 - \bigcirc \text{for n} = 1:2000
35 -
        s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
36 -
37 -
        calculated(i) = p1*(1 + 2*s);
38 -
39 -
        loglog(X, calculated);
40 -
        err=0;
41 - \Box for i = 1:length(X)
42 -
         err=err+((given(i)-calculated(i))/given(i))^2;
43 -
44 -
        initial=100*((err/length(X))^0.5)
45 -
        legend('Given ', 'Final ', 'Initial')
```



```
%18EX20030 UTKARSH JAISWAL
 2 -
       clear all
 3 -
       close all
 4 -
       clc
 5 -
       X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
 6 -
       given=[109.94, 109.84, 109.44, 108.73, 107.70, 106.39, 103.13, 99.49, 91.26, 85.65, 82.19, 80.06, 77.83, 76.79, 76.24, 75.70, 75.47];
 7 -
       plot(X, given, 'o')
 8 -
       hold on;
 9 -
       h=4;
10 -
       p1 = 109;
11 -
       p2=75;
12 -
       K = (p2 - p1)/(p2 + p1);
13 - ☐ for i = 1:length(X)
14 -
       d = X(i)/h;
15 -
       s = 0;
16 -
     \triangle for n = 1:2000
       s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
17 -
18 -
19 -
       calculated(i) = p1*(1 + 2*s);
20 -
21 -
       loglog(X, calculated);
22 -
       err=0;
23 - for i = 1:length(X)
24 -
        err=err+((given(i)-calculated(i))/given(i))^2;
25 -
       end
26 -
       final=100*((err/length(X))^0.5)
27 -
       h= 6;
       p1 = 109;
28 -
29 -
       p2=75;
```

```
16 - | tor n = 1:2000
17 -
       s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
18 -
       calculated(i) = p1*(1 + 2*s);
19 -
20 -
      end
21 -
       loglog(X, calculated);
22 -
       err=0;
23 - ☐ for i = 1:length(X)
24 -
        err=err+((given(i)-calculated(i))/given(i))^2;
25 -
       final=100*((err/length(X))^0.5)
26 -
27 -
       h= 6;
28 -
       p1 = 109;
29 -
      p2=75;
30 -
       K = (p2 - p1)/(p2 + p1);
31 - \Box for i = 1:length(X)
32 -
       d = X(i)/h;
       s = 0;
33 -
34 - \Box \text{ for } n = 1:2000
35 -
       s = s + (((d^3) * (K^n)) / ((d^2 + 4*(n)^2)^(1.5)));
36 -
37 -
       calculated(i) = p1*(1 + 2*s);
38 -
39 -
       loglog(X, calculated);
40 -
       err=0;
41 - ☐ for i = 1:length(X)
42 -
        err=err+((given(i)-calculated(i))/given(i))^2;
43 -
       initial=100*((err/length(X))^0.5)
44 -
45 -
       legend('Given ', 'Final ', 'Initial')
```

