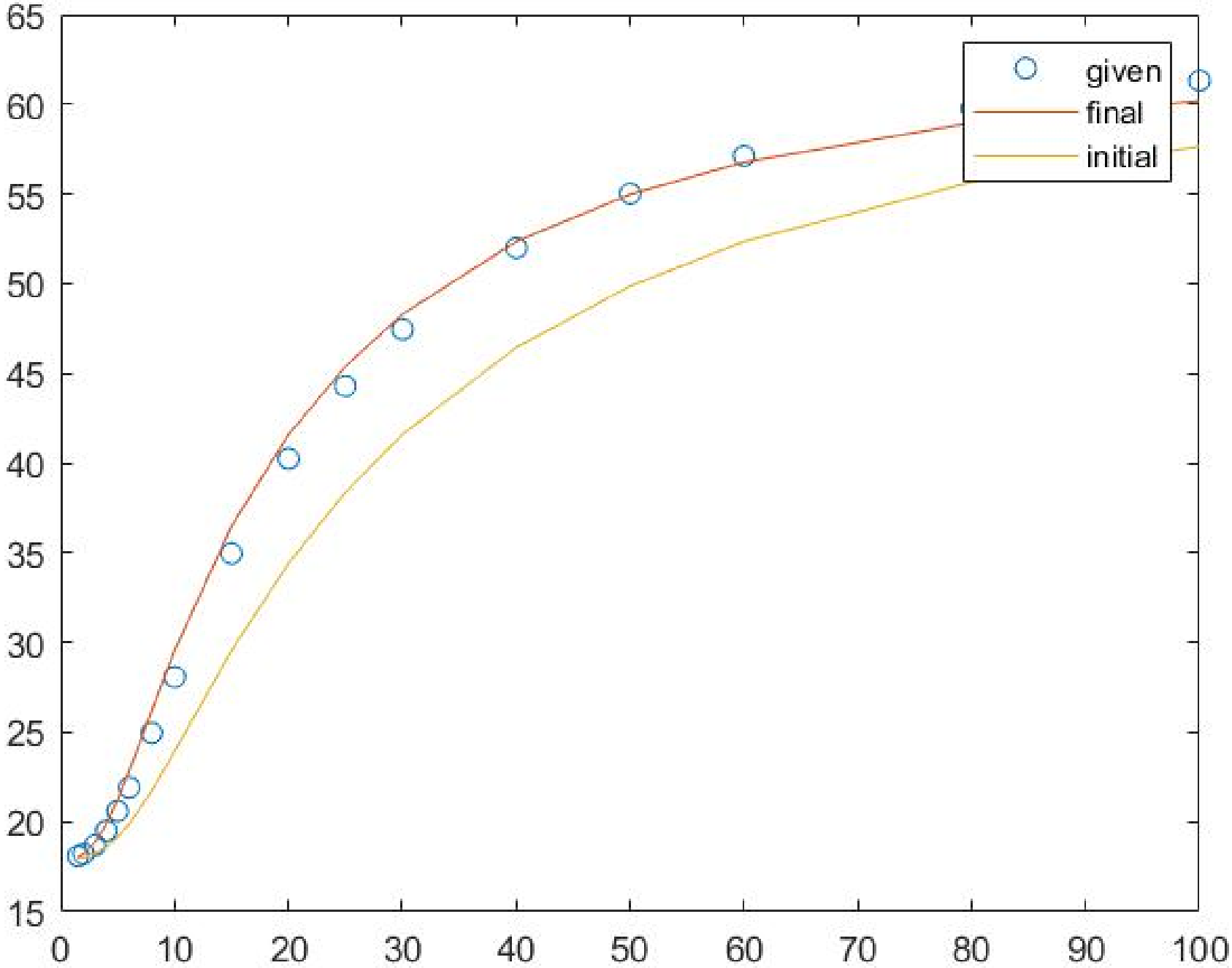
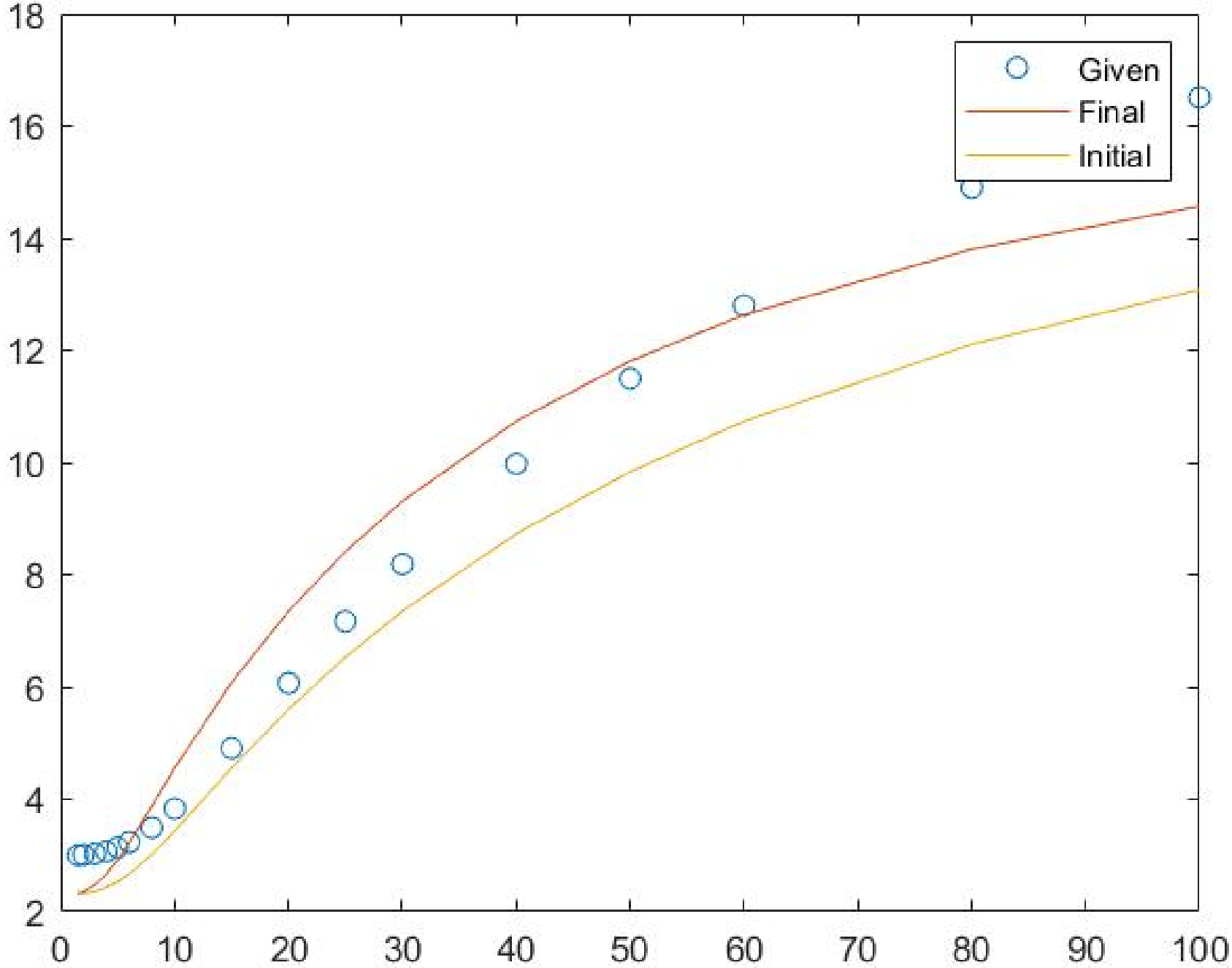
```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
given=[18.08 18.21 18.69 19.49 20.59 21.92 24.95 28.07 34.95 40.24 44.29 47.45 51.99 55.01 57.12 59.78 61.31];
plot(X,given,'O')
hold on;
h= 4;
p1 = 17.9;
p2=63;
K = (p2 - p1)/(p2 + p1);
for i = 1:length(X)
d = X(i)/h;
s =0;
for n = 1:2000
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
final=100*((err/length(X))^0.5)
final = 3.4230
h= 6;
p1 = 17.9;
```

```
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
final=100*((err/length(X))^0.5)
final = 3.4230
h= 6;
p1 = 17.9;
p2=63;
K = (p2 - p1)/(p2 + p1);
for i = 1:length(X)
d = X(i)/h;
s =0;
for n = 1:2000
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
initial=100*((err/length(X))^0.5)
initial = 10.1898
legend('given ','final ','initial')
```


given
final
initial
65
60
55
50
45
40
35
30
25
20
15
0
10
20
30
40
50
60
70
80
90
100

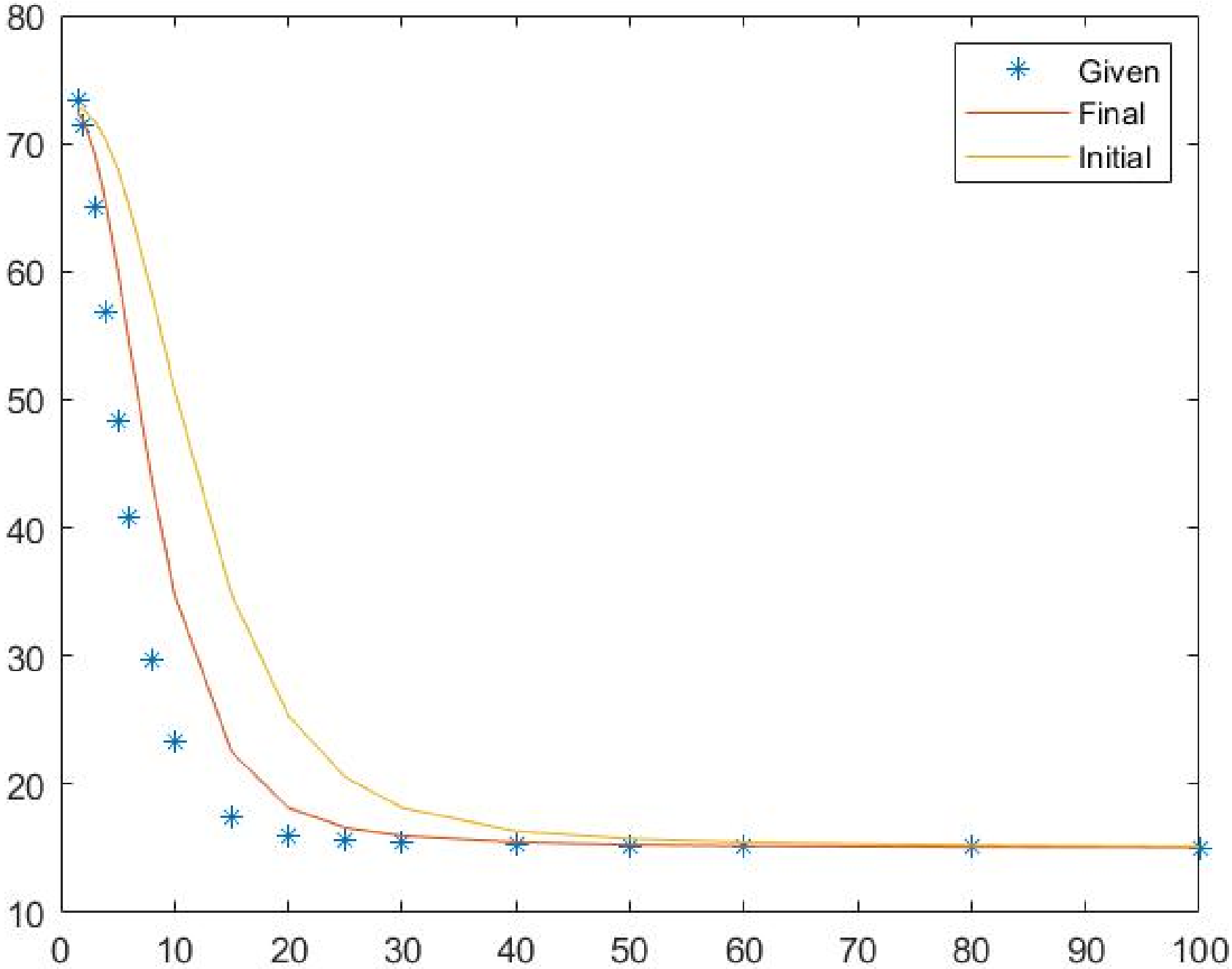
```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
given=[3.00 3.01 3.03 3.07 3.14 3.23 3.49 3.83 4.91 6.07 7.17 8.19 9.98 11.50 12.80 14.90 16.51];
plot(X,given,'o')
hold on;
h= 4;
p1 = 2.30;
p2=17;
K = (p2 - p1)/(p2 + p1);
for i = 1:length(X)
d = X(i)/h;
s =0;
for n = 1:2000
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
final=100*((err/length(X))^0.5)
h= 6;
p1 = 2.3;
p2=17;
```

```
    s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
    end
    calculated(i) = p1*(1 + 2*s);
    end
    loglog(X,calculated);
    err=0;
    for i = 1:length(X)
     err=err+((given(i)-calculated(i))/given(i))^2;
    end
    final=100*((err/length(X))^0.5)
    h= 6;
    p1 = 2.3;
    p2=17;
    K = (p2 - p1)/(p2 + p1);
    for i = 1:length(X)
    d = X(i)/h;
    s =0;
    for n = 1:2000
    s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
    end
    calculated(i) = p1*(1 + 2*s);
    end
    loglog(X,calculated);
    err=0;
    for i = 1:length(X)
     err=err+((given(i)-calculated(i))/given(i))^2;
    end
    initial=100*((err/length(X))^0.5)
    legend('Given ','Final ','Initial')
```


Given
Final
Initial
18
16
14
12
10
8
6
4
2
0
10
20
30
40
50
60
70
80
90
100

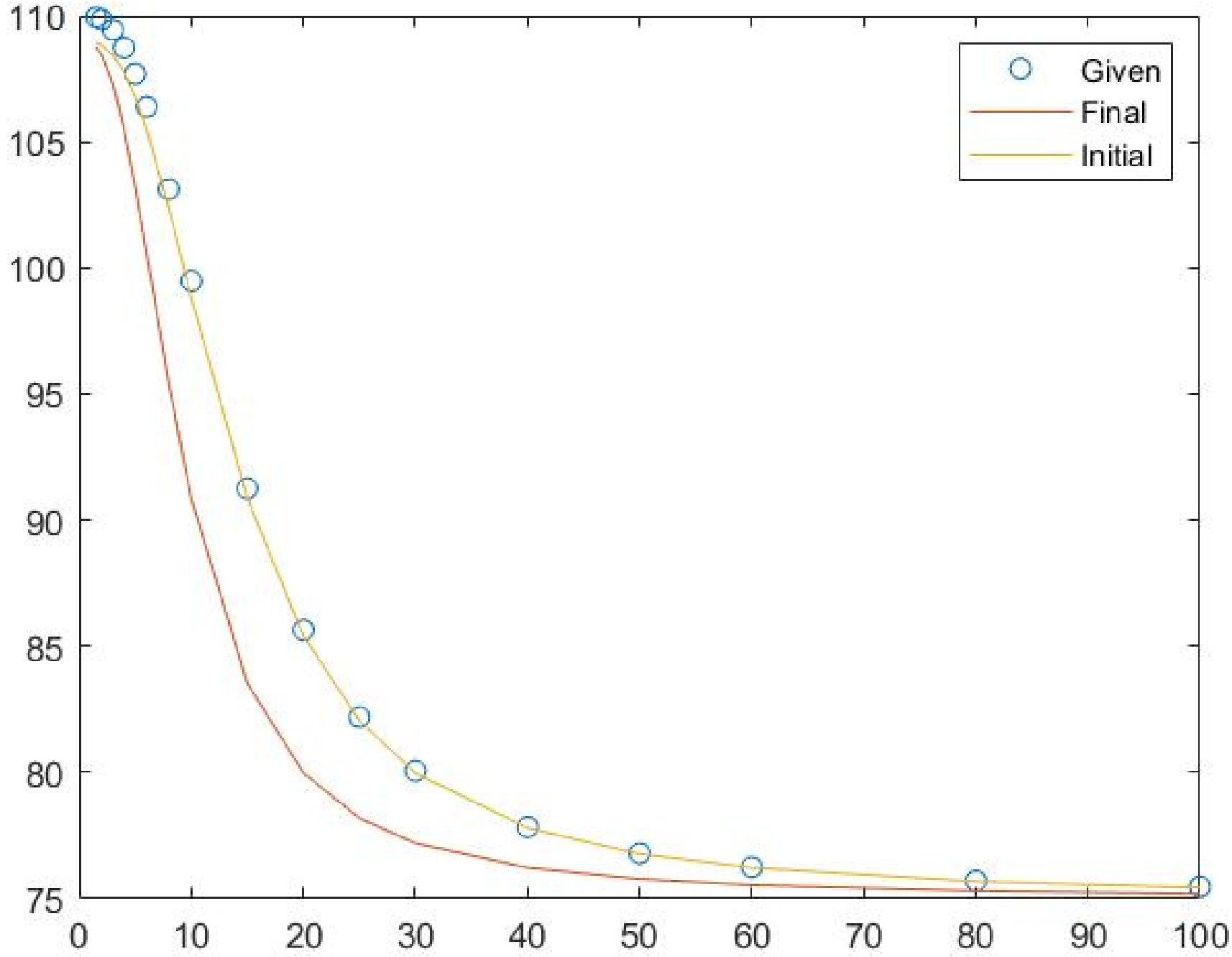
```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
given=[73.34, 71.34, 65.03,56.84,48.42,40.86,29.75,23.32,17.41,16.04,15.61,15.42,15.27,15.21,15.17,15.11,15.07];
plot(X,given,'o')
hold on;
h= 4;
p1 = 73;
p2=15;
K = (p2 - p1)/(p2 + p1);
for i =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

```
    s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
    end
    calculated(i) = p1*(1 + 2*s);
    end
    loglog(X,calculated);
    err=0;
    for i = 1:length(X)
     err=err+((given(i)-calculated(i))/given(i))^2;
    end
    final=100*((err/length(X))^0.5)
    h= 6;
    p1 = 73;
    p2=15;
    K = (p2 - p1)/(p2 + p1);
    for i = 1:length(X)
    d = X(i)/h;
    s =0;
    for n = 1:2000
    s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
    end
    calculated(i) = p1*(1 + 2*s);
    end
    loglog(X,calculated);
    err=0;
    for i = 1:length(X)
     err=err+((given(i)-calculated(i))/given(i))^2;
    end
    initial=100*((err/length(X))^0.5)
    legend('Given ','Final ','Initial')
```


Given
Final
Initial
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100

```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
X=[1.5 2 3 4 5 6 8 10 15 20 25 30 40 50 60 80 100];
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];
plot(X,given,'o')
hold on;
h= 4;
p1 = 109;
p2=75;
K = (p2 - p1)/(p2 + p1);
for i = 1:length(X)
d = X(i)/h;
s =0;
for n = 1:2000
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
final=100*((err/length(X))^0.5)
h= 6;
p1 = 109;
p2=75;
```

```
for n = 1:2000
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
final=100*((err/length(X))^0.5)
h= 6;
p1 = 109;
p2=75;
K = (p2 - p1)/(p2 + p1);
for i = 1:length(X)
d = X(i)/h;
s =0;
for n = 1:2000
s = s + (((d^3)*(K^n))/((d^2 + 4*(n)^2)^(1.5)));
end
calculated(i) = p1*(1 + 2*s);
end
loglog(X,calculated);
err=0;
for i = 1:length(X)
 err=err+((given(i)-calculated(i))/given(i))^2;
end
initial=100*((err/length(X))^0.5)
legend('Given ','Final ','Initial')
```


110
105
100
95
90
85
80
75
0
10
20
30
40
50
60
70
80
90
100
Given
Final
Initial