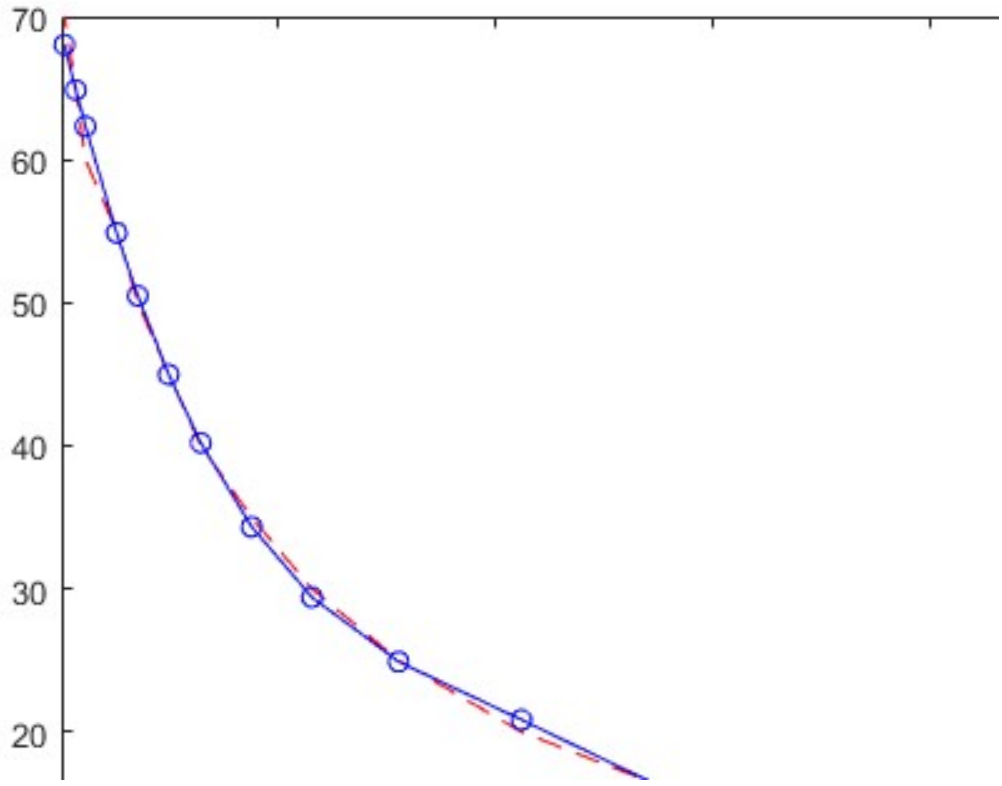
```
d     = [  10     15    20     25     30     35     40     45     50     55    60     65     70];
s     = [2.26  1.596 1.251  1.024  0.868  0.754   0.66  0.602  0.544  0.506 0.452  0.428  0.404];
adc   = [2810   1985  1560   1277   1077    938    821    747    676    627   555    533    507];
s_est = [2.248 1.588 1.248 1.0216 0.8616 0.7504 0.6568 0.5976 0.5408 0.5016 0.444 0.3731 0.4056];

%y = @(a,b,x) a./x + b;
% y = a/x + b
% y = distance in cm
% x = ADC output digital voltage
% a,b = unknowns

c1 = polyfit(adc,d,4); %coefficients of ADC output equation
a = c1(4); b = c1(5);
%y = polyval(c1,adc);
y =  c1(1)*adc.^4 + c1(2)*adc.^3 + c1(3)*adc.^2 + c1(4)*adc + c1(5);
plot(adc,d,'--r');
hold on;
plot(adc,y,'-ob');
```

```
Warning: Polynomial is badly conditioned. Add points with distinct X values,
reduce the degree of the polynomial, or try centering and scaling as described
in HELP POLYFIT.
```



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