```
[1.5,4.92;2.0,4.78;2.1,4.71;2.15,4.67;2.2,4.61;2.25,4.56;2.3,4.47;2.35,4.36;2.4,4
%calculate slope of points
slope = diff(z(:,1))./diff(z(:,2));
detect for use slope array and find the slope = -1
%this on the array 5 and 15 indexed values = −1 and after
%go to z matrix and find the true point
%first point (2.2,4.61)
%second point (2.7, 0.3)
figure, plot(z(:, 1), z(:, 2), '-o'); hold on
xlabel('V input')
ylabel('V output')
%draw slope line
x = 2:0.25:3;
m = -1;
Vil = 2.2;
Voh = 4.61;
y = m*(x - Vil) + Voh;
plot(x,y); hold on
%text(x(fix(Vil)),y(fix(Voh)),strcat('(',num2str(Vil),',',num2str(Voh),')
slope = -1')); hold on
%draw lines Vil and Voh
lines
axLims = [1.5 5 0 5]; %[x-min, x-max, y-min, y-max] axis limits
plot(point(1), point(2), 'o')
hold on
plot([point(1), point(1)], [axLims(3), point(2)], '--');
hold on %vertical line
plot([axLims(1), point(1)], [point(2), point(2)], '--'); hold on
  %horizontal line
text(axLims(1), Voh, sprintf('point (%.2f, %.2f) Voh',
point), 'HorizontalAlignment', 'Left', 'VerticalAlignment', 'Bottom');hold on
text(Vil, axLims(3), sprintf('point (%.2f, %.2f) Vil',
point), 'HorizontalAlignment', 'Left', 'VerticalAlignment', 'Bottom');hold on
%draw slope line
x = 2:0.25:3;
m = -1;
Vih = 2.7;
Vol = 0.3;
y = m*(x - Vih) + Vol;
plot(x,y)
```

z =

```
\text{text}(x(fix(4)),y(fix(2)),strcat('(',num2str(Vih),',',num2str(Vol),'))
slope = -1')
%draw lines Vih and Vol
lines
axLims = [1.5 5 0 5]; %[x-min, x-max, y-min, y-max] axis limits
plot(point(1), point(2), 'o')
hold on
plot([point(1), point(1)], [axLims(3), point(2)], '--');
hold on %vertical line
plot([axLims(1), point(1)], [point(2), point(2)], '--') ; hold on
  %horizontal line
text(axLims(1), Vol, sprintf('point (%.2f, %.2f) Vol',
point), 'HorizontalAlignment', 'Left', 'VerticalAlignment', 'Bottom');hold on
text(Vih, axLims(3), sprintf('point (%.2f, %.2f) Vih',
point), 'HorizontalAlignment', 'Left', 'VerticalAlignment', 'Bottom');hold on
grid on
%Noise Margin Calculation
Nml = Vil-Vol %Calculate NML
Nmh = Voh - Vih %Calculate NMH
z =
    1.5000
             4.9200
    2.0000
             4.7800
             4.7100
    2.1000
    2.1500
             4.6700
    2.2000
             4.6100
    2.2500
             4.5600
    2.3000
             4.4700
   2.3500
             4.3600
    2.4000
             4.2400
    2.4500
             3.9500
    2.5000
             2.1600
    2.5500
             0.6700
    2.6000
             0.4500
    2.6500
             0.3800
    2.7000
             0.3000
             0.2500
    2.7500
   2.8000
             0.2200
    2.8500
             0.1800
    2.9000
             0.1500
    2.9500
             0.1300
    3.0000
             0.1100
    3.5000
             0.0078
    4.0000
             0.0001
    4.5000
             0.0001
```

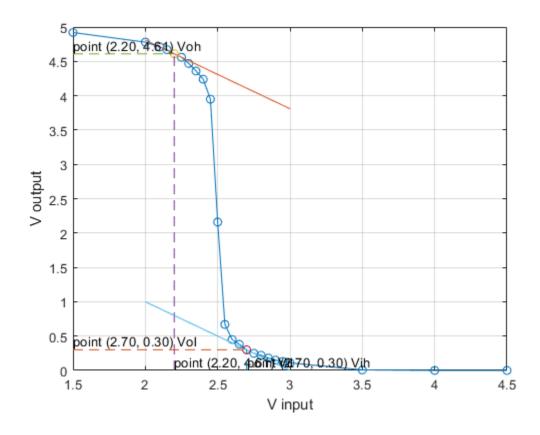
2

Nml =

1.9000

Nmh =

1.9100



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