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PS11-1

1 Linear Program

1.1 Objective Function

The function to be minimized for this problem is $MAX_{1 \leq i \leq n}(|y_i - (mx_i + b)|)$

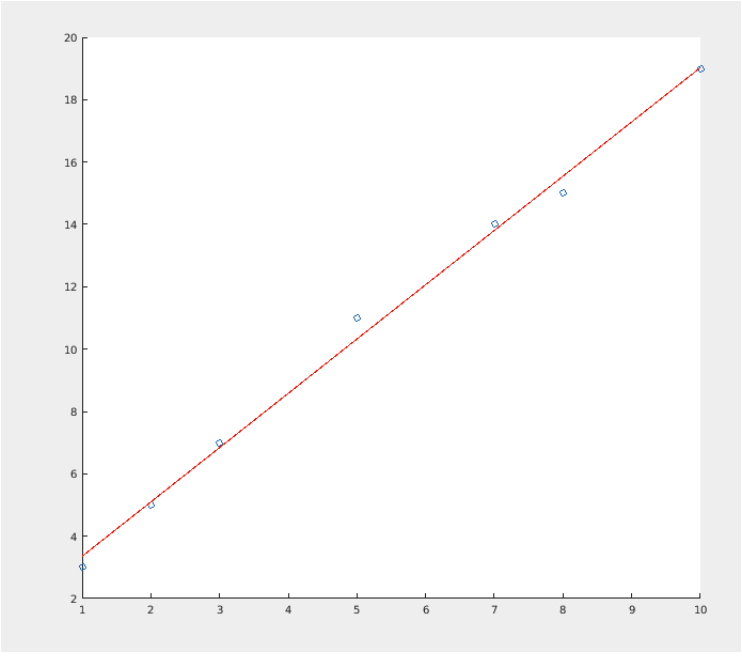
2 SOLUTION

I implemented my solution in MATLAB.

Editor - /home/adair/PS11.m

PS11.m

```
x = [1,2,3,5,7,8,10];
y = [3,5,7,11,14,15,19];
coeffs = polyfit(x,y,1)
fittedX = linspace(min(x),max(x),7);
%fittedX = x;
fittedY = polyval(coeffs,fittedX);
scatter(x,y);
hold on
plot(fittedX,fittedY,'r-','LineWidth',1);
maxerrY = max(fittedY - y)
maxerrX = max(fittedX - x)
```



Optimal Solution: m = 1.74, b = 1.62
MAXIMUM ERROR = 1.58