ME 1020 Engineering Programming with MATLAB

Problem 7.2:

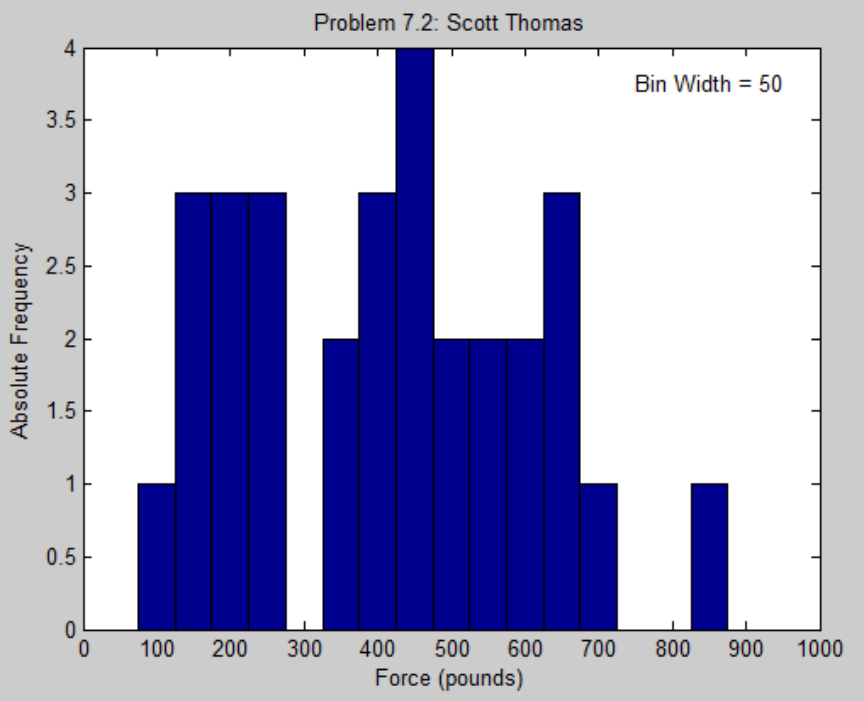
2. Thirty pieces of structural timber of the same dimensions were subjected to an increasing lateral force until they broke. The measured force in pounds required to break them is given in the following list. Plot the absolute frequency histogram. Try bin widths of 50, 100, and 200 lb. Which gives the most meaningful histogram? Try to find a better value for the bin width.

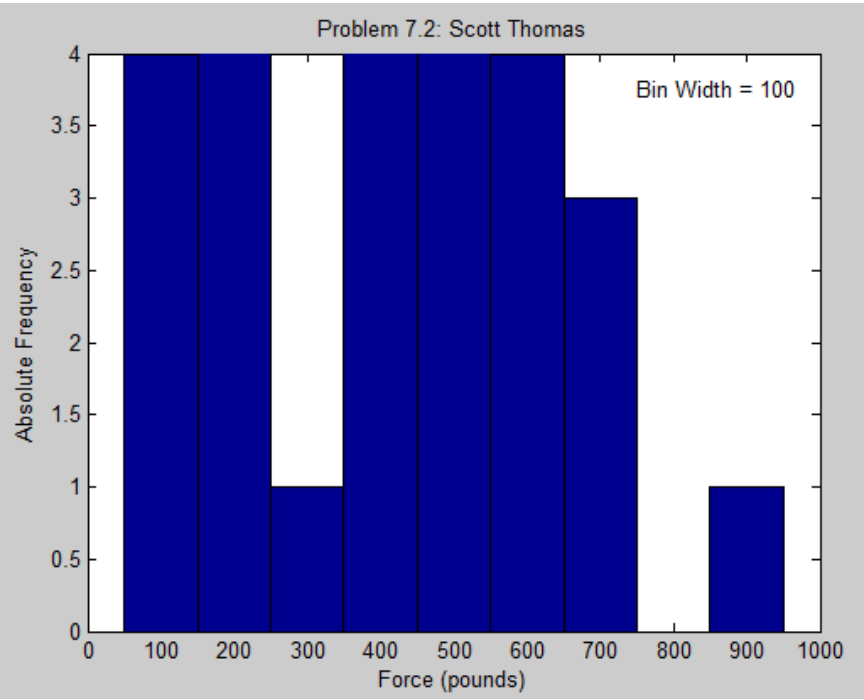
243	236	389	628	143	417	205
404	464	605	137	123	372	439
497	500	535	577	441	231	675
132	196	217	660	569	865	725
457	347					

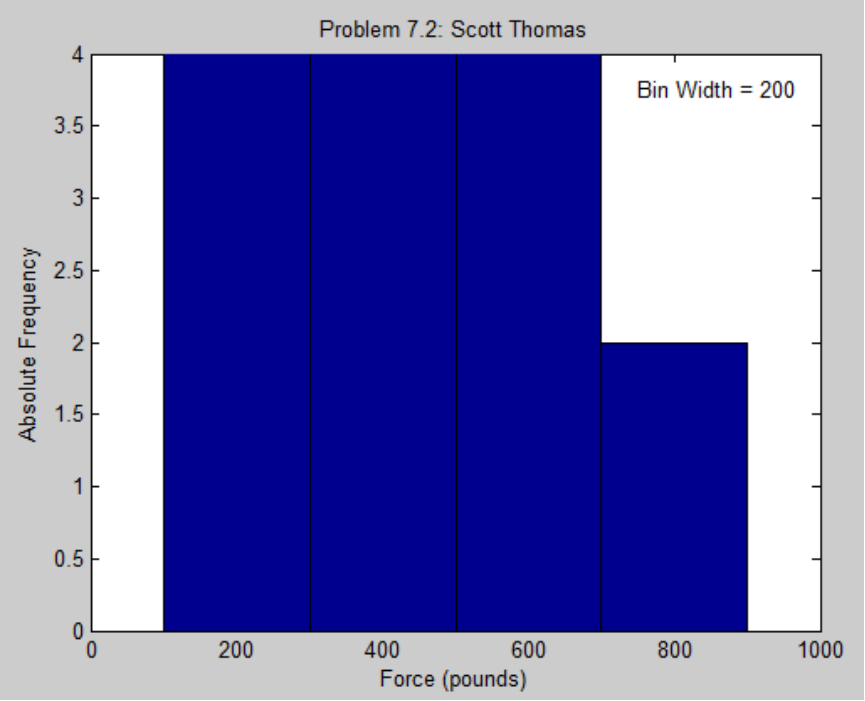
Go to the following webpage to download the data for this problem:

www.cs.wright.edu/~sthomas/prob7_2.xlsx

```
% Problem 7.2
clear
clc
disp('Problem 7.2: Scott Thomas')

force = xlsread('prob7_2');
start = 0;
step = 50;
stop = 1000;
x = start:step:stop;

%Absolute Frequency Plot:
hist(force,x)
xlabel('Force (pounds)'), ylabel('Absolute Frequency')
title('Problem 7.2: Scott Thomas')
axis([start stop 0 4])
text(750, 3.75,'Bin Width = 50')
%text(750, 3.75,'Bin Width = 100')
%text(750, 3.75,'Bin Width = 200')

```


Problem 7.2: Scott Thomas
Bin Width = 50
Absolute Frequency
Force (pounds)
0
0.5
1
1.5
2
2.5
3
3.5
4
0
100
200
300
400
500
600
700
800
900
1000


Problem 7.2: Scott Thomas
Bin Width = 100
Absolute Frequency
Force (pounds)
0
0.5
1
1.5
2
2.5
3
3.5
4
0
100
200
300
400
500
600
700
800
900
1000


Problem 7.2: Scott Thomas
Bin Width = 200
Absolute Frequency
Force (pounds)
0
0.5
1
1.5
2
2.5
3
3.5
4
0
200
400
600
800
1000