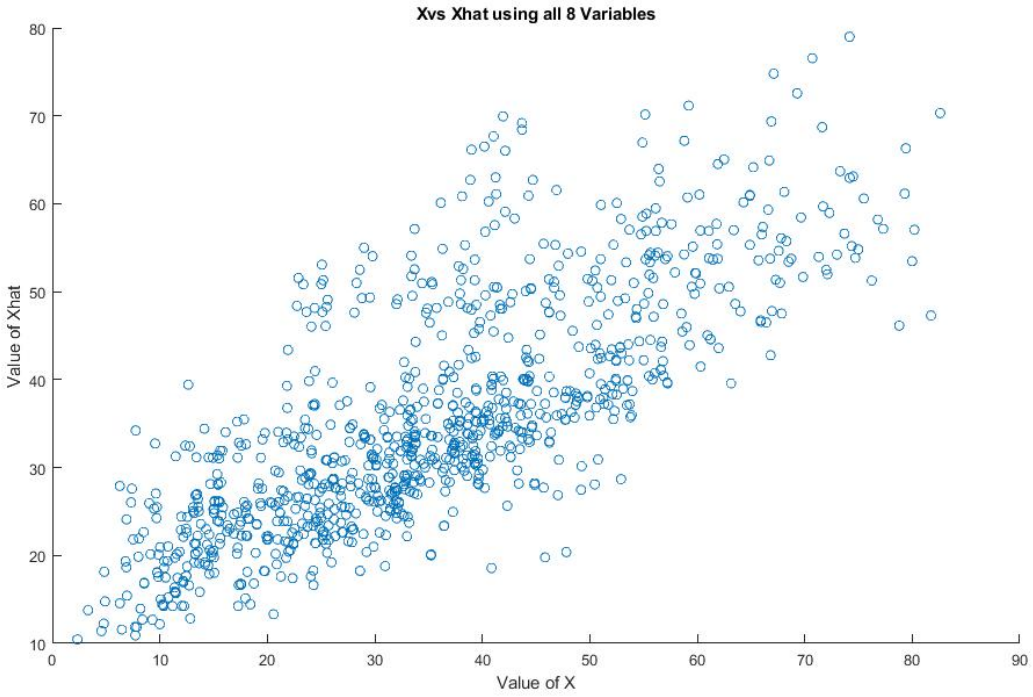
Ian Chadwick
HW#9 Problem
9.4

a)
```
for i = 1:ny
Xhat(i,:) = muX + sigmaXY *inv(sigmaY)*(Y(i,:) - muY)';
End
```

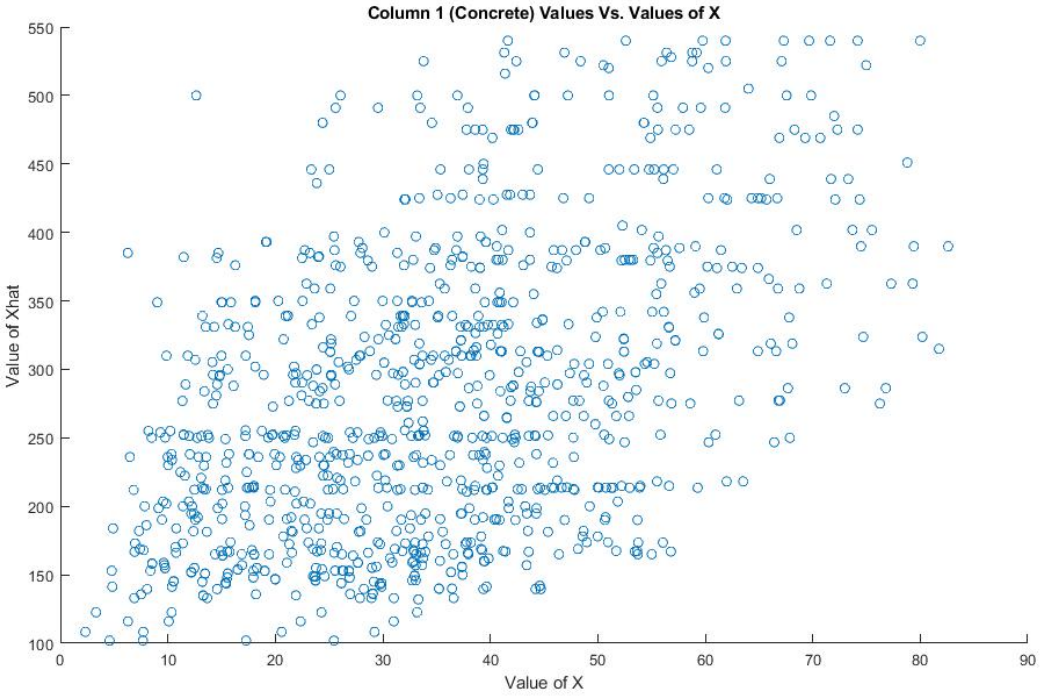
b)
```
MSEsum = 0;

for i = 1:ny
MSEsum = MSEsum + (X(i,:)-Xhat(i,:))^2;
end

MSE = MSEsum/ny;
```

c)
```
Rsum = 0;
for i = 1:ny
Rsum = Rsum + (X(i) - muX)^2;
end

R2 = 1-(MSE/(Rsum/ny));
```

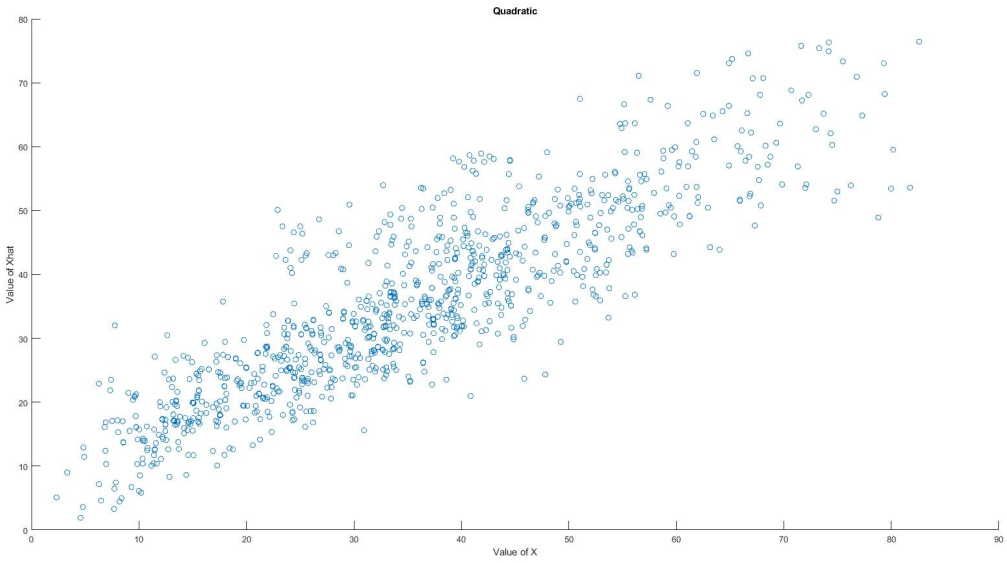
d) MSE = 107.1972, R2 = 0.6155



e) Column 1: The Cement Variable has the highest R2 value and lowest MSE.
MSE = 209.7113, R2 = 0.2478



f) MSE = 62.9475, R2 = 0.7742



This is a better fit, which is because the MSE is lower than in the linear approximation.