Problem 4.6

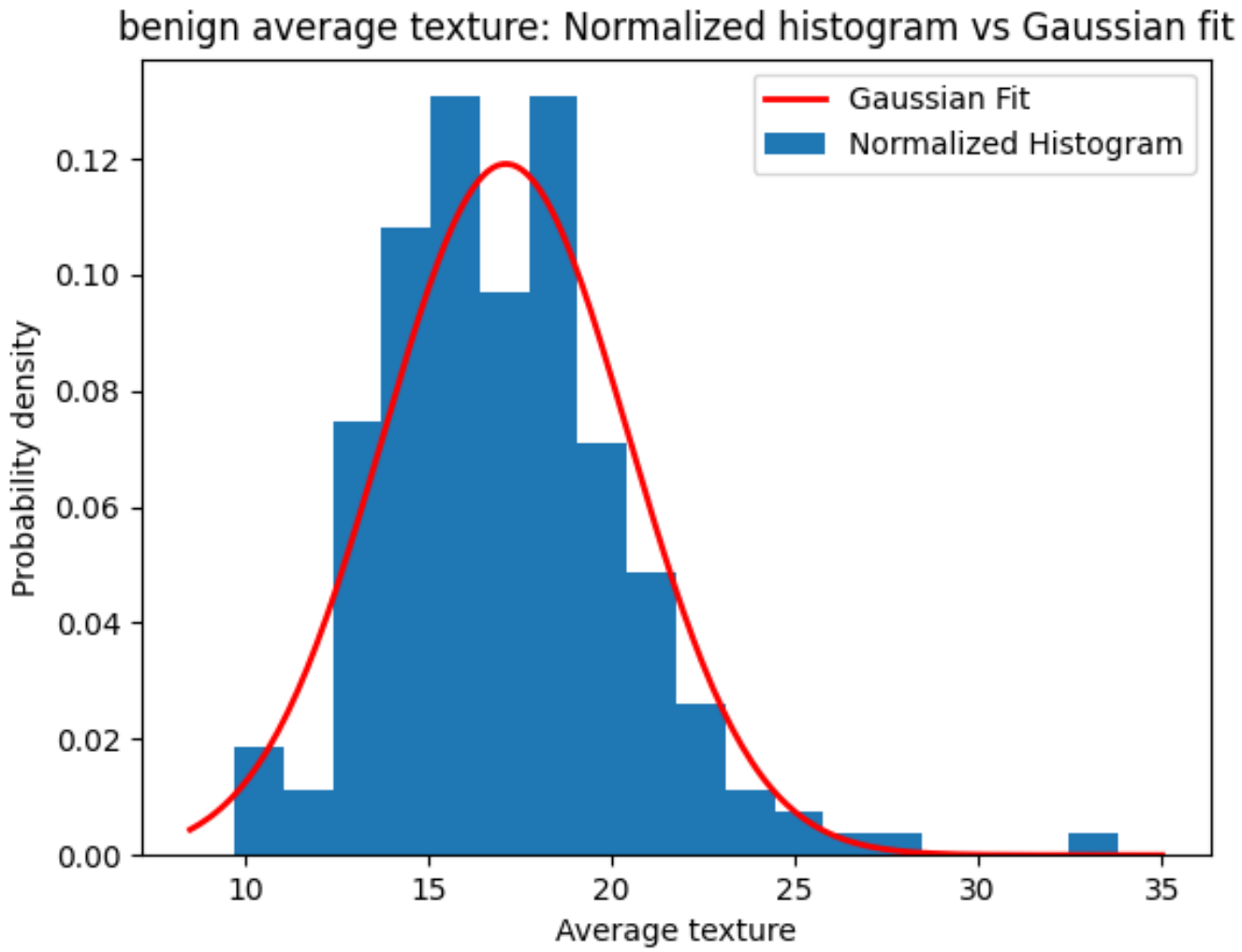
Part (a). Means

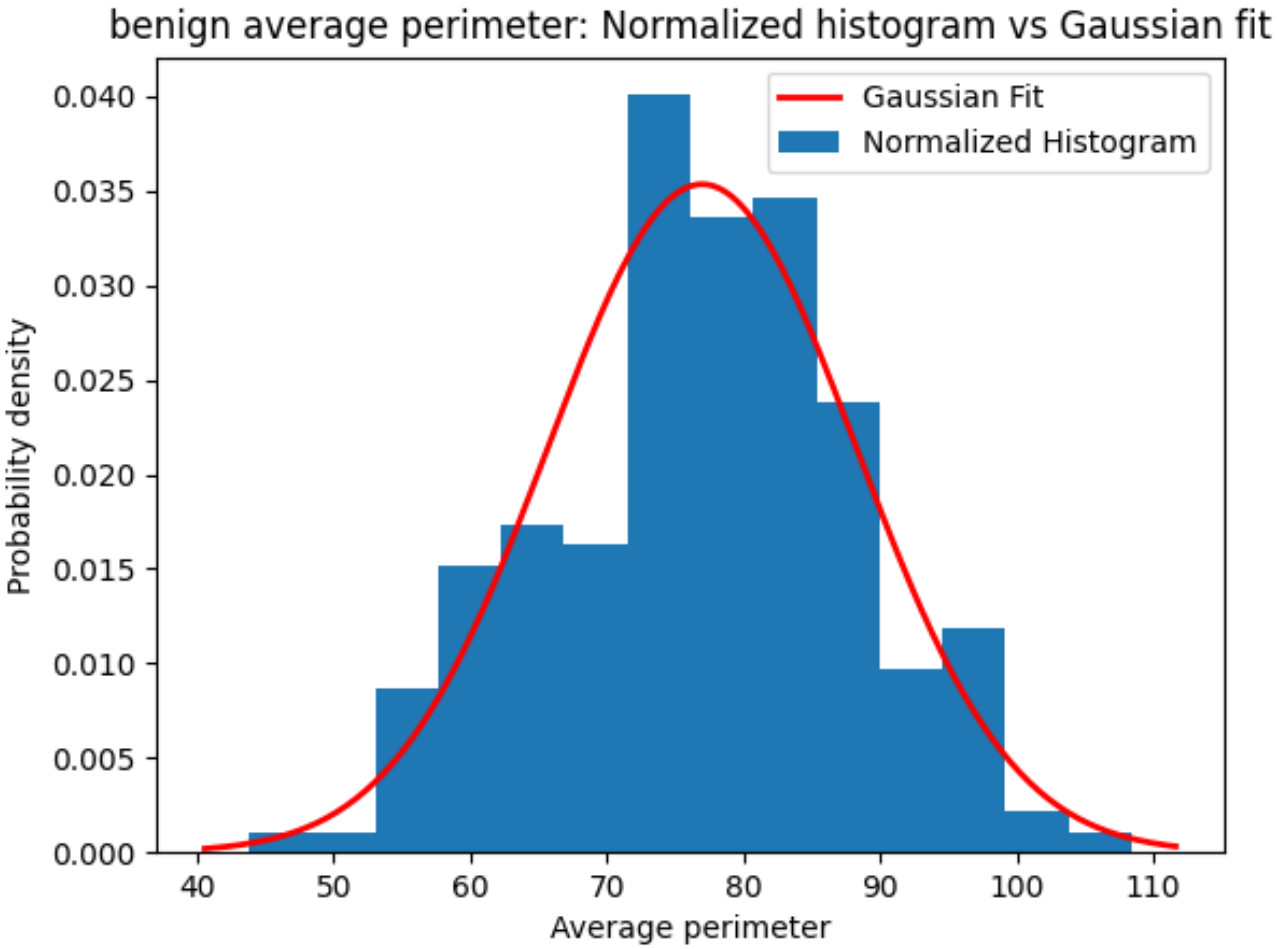
	Texture	Perimeter
Benign	[17.1157	76.96375]
Malignant	[21.4498	114.53195]

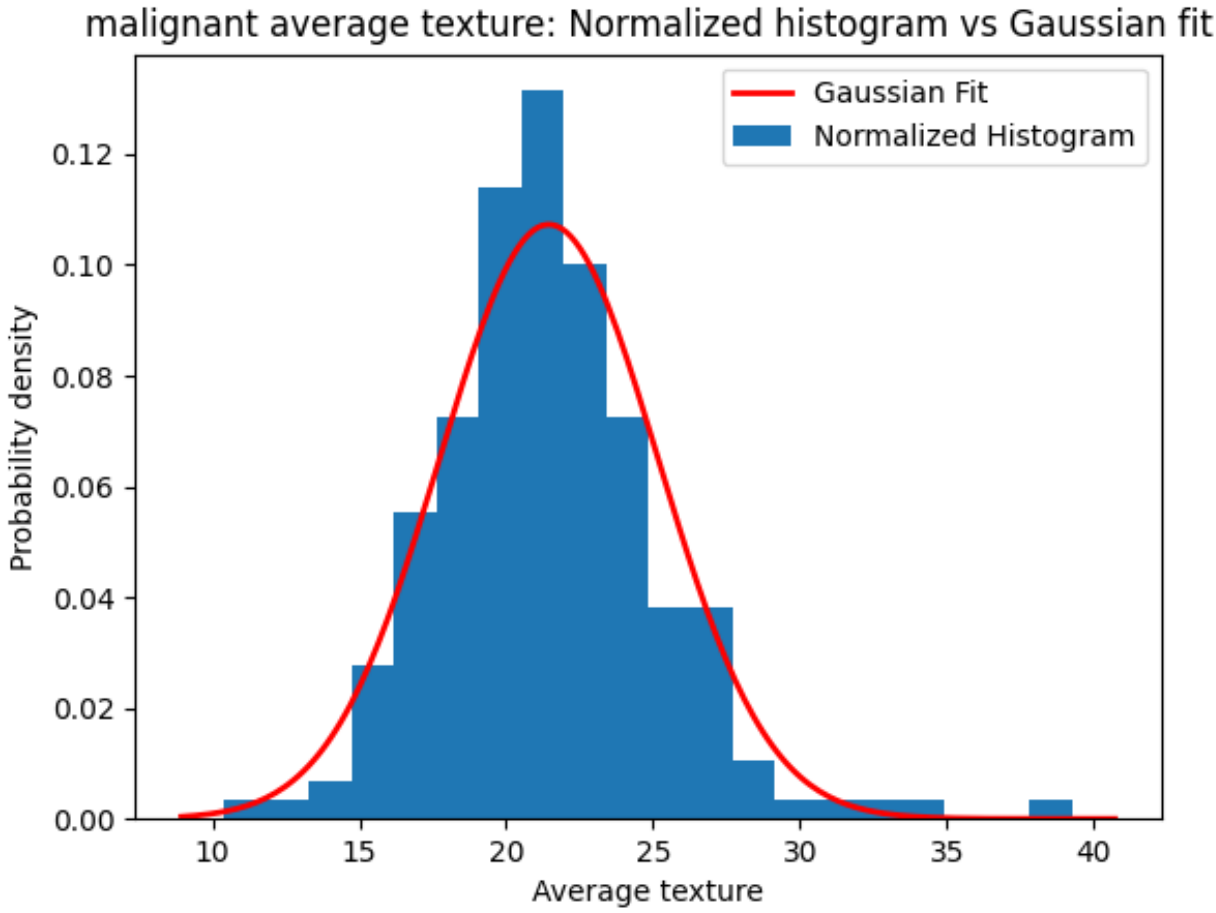
Part (b). Variance

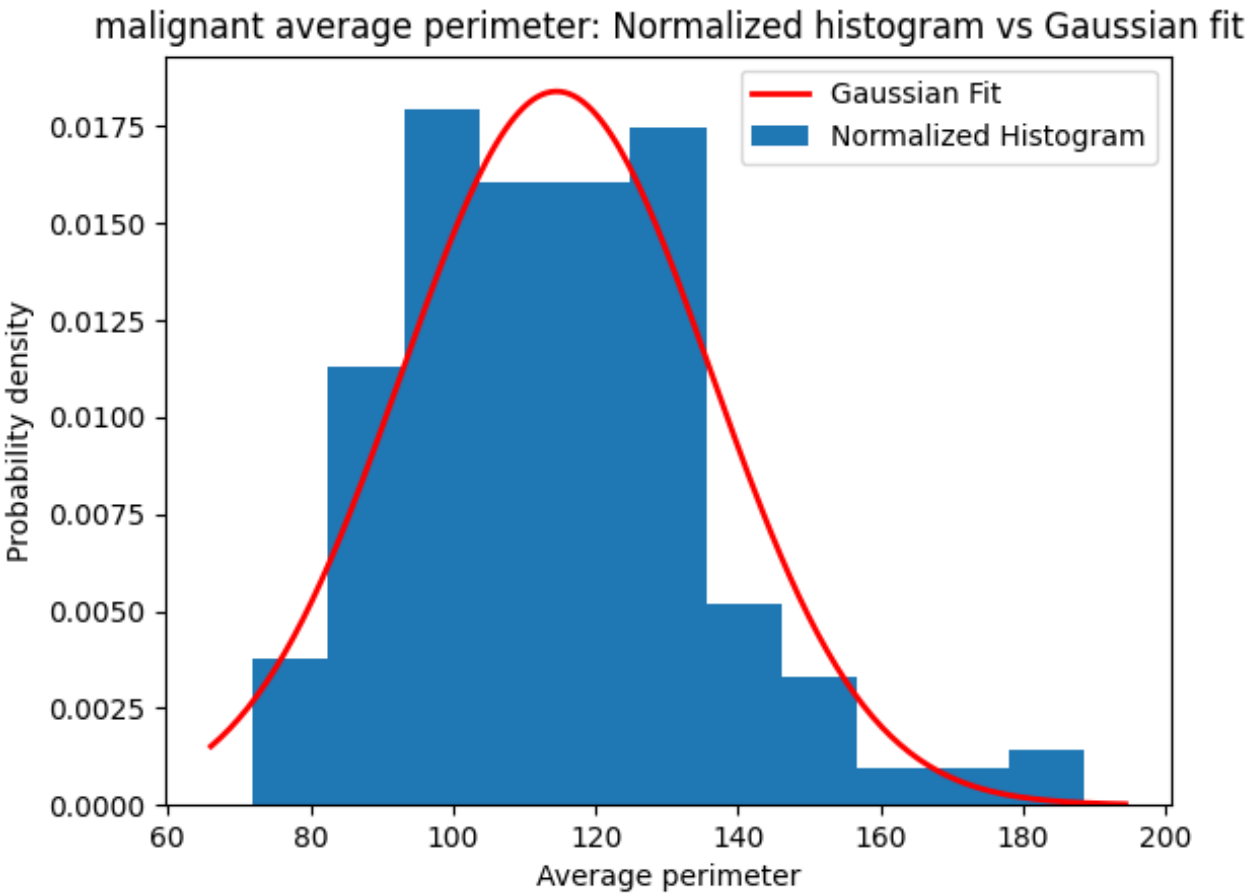
	Texture	Perimeter
Benign	[11.27652514	127.96211401]
Malignant	[13.89054569	472.34102382]

Part (c). Four Plots

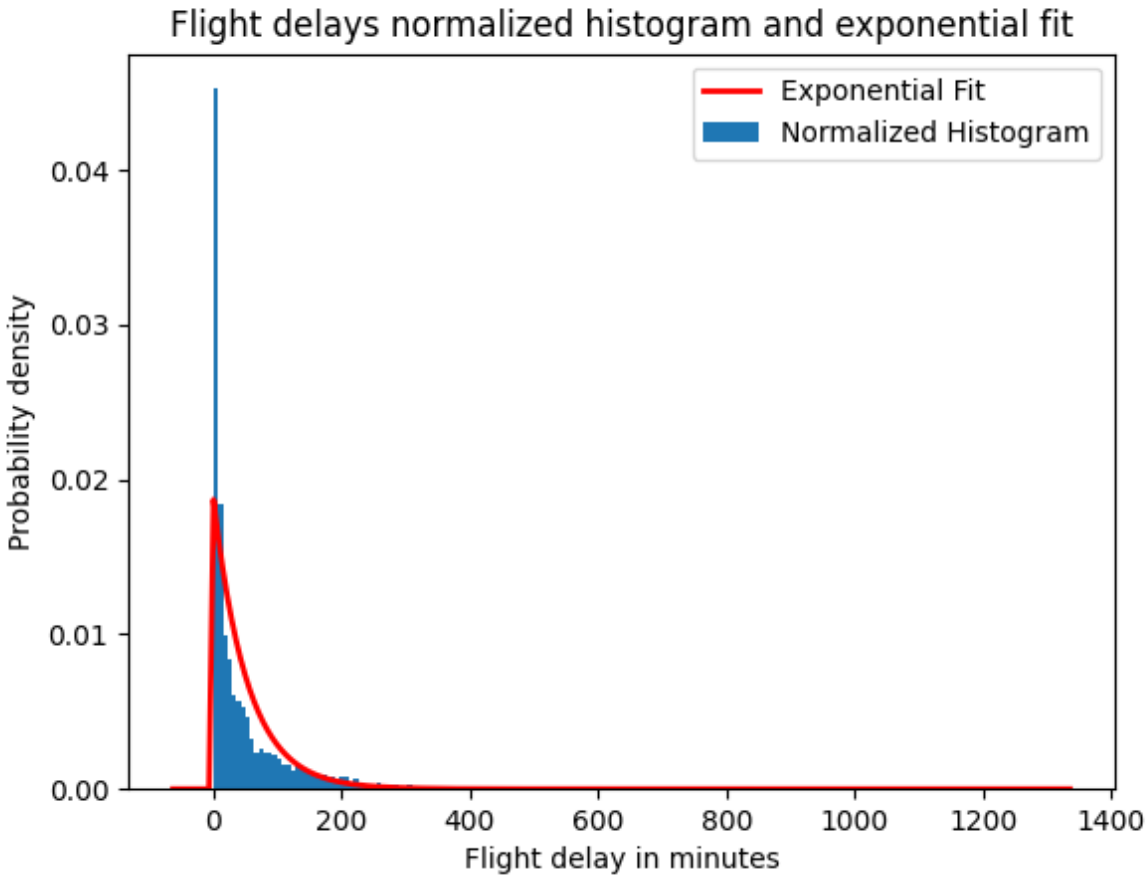



benign average perimeter: Normalized histogram vs Gaussian fit
Gaussian Fit
Normalized Histogram
Probability density
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
40
50
60
70
80
90
100
110
Average perimeter


malignant average texture: Normalized histogram vs Gaussian fit
Gaussian Fit
Normalized Histogram
Probability density
0.12
0.10
0.08
0.06
0.04
0.02
0.00
10
15
20
25
30
35
40
Average texture



Part (d). Exponential histogram



Part (e). Probability, fraction, comment

Probability[Z > 60] = 0.32109077601786185

Fraction of flights delayed by more than 60 mins = 1205/4611 ~ 0.261

Comment: This is an ok approximation – the percent error is about 22.8%, which is not very ideal, but I suppose it's not outrageous. The plot also generally fits the data, so it is not a terrible approximation.