Problem 1
(a) Total = 396; mean = 36
(b) Median = 39; IQR = 49–22 = 27
(c) Need to show a table or explicitly list the terms. \[ s^2 = \frac{\sum (x_i - \text{mean})^2}{n-1} \]
(d) \[ s = \sqrt{331.4} = 18.204 \]
(e) \[ \text{mean} \pm s = [17.796, 54.204] \]; 8 of 11 observations in this interval = 72.7%
(f) Appropriate box plot. Need to label min, Q1, Median, Q3, and Max.
   Note: 70 is not an outlier; less than 1.5 IQR above Q3
(g) mean = 37.83

Problem 2
(a) 50% fall below the mean (normal curve)
(b) 16% of the scores fall above the \( \mu + \sigma = 100+15 = 115 \). Need to show using 68-95-99.7 rule and include sketch.
(c) \[ z = \frac{(x - \mu)}{\sigma} = \frac{(125 - 100)}{15} = 2.333 \]
(d) Use normal tables 99\(^{th}\) percentile
(e) 1%
(f) Histogram A

Problem 3
(a) 13 women (use frequency chart given)
(b) 64 inches
(c) 63 inches
(d) Histogram with:
   - Five intervals of equal width
   - Labels on both axes (inches and frequency)
   - Histogram boxes that touch each other.
   - Boxes that clearly indicate which values are included in which interval (easiest to do by not having the boundary lines fall on integers).
   - Correct counts

Problem 4
(a) Histogram A – correct positive correlation, mean of data falls within cluster.
(b) Use given formula, then solve for y-intercept: \( y = .723x + 22.099 \)
(c) Plug in 85 into the formula you derived in (b): \( .723(85) + 22.099 = 87 \)
(d) Plot the regression line – use formula from (b) to get 3 plot points.

Problem 5
(a) Skewed left
(b) Mean = 3507 and Median = 3544. Mean must be less than median b/c of skew.
(c) IQR = 340. Count points on dot plot to find Q1 and Q3, estimate IQR.
(d) No. The median is too high in the box plot.
(e) Must label the vertical axis and have columns of width 300 grams.
   Counts are: 3, 4, 5, 19, 17, 7
(f) \[ \text{mean} \pm 2s = [2767, 4247] \]; Empirical rule says 95%, Count 52/55 = 94.54%