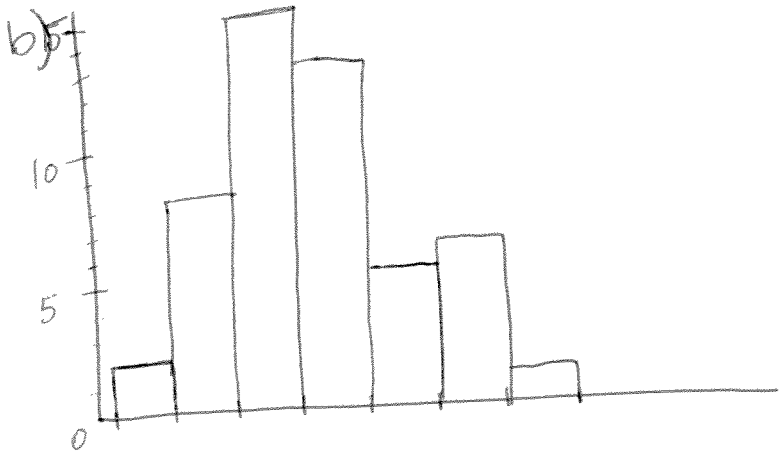
Solutions to Post-Class Problems Due 22 Jan

3.1

① a)

Interval	Frequency
(7.995, 8.245)	2
(8.245, 8.495)	8
(8.495, 8.745)	15
(8.745, 8.995)	13
(8.995, 9.245)	5
(9.245, 9.495)	6
(9.495, 9.745)	1

b)



* u_i is the class mark, or midpoint of class interval.

c) $\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} = 8.773$ $\quad s_x = \sqrt{\left(\frac{n}{n-1}\right)\sum_{i=1}^{n}(x_i - \bar{x})^2} = 0.365$

$\bar{u} = \frac{1}{n}\sum_{i=1}^{k} f_i u_i = 8.785$ $\quad s_u = \sqrt{\left(\frac{1}{n-1}\right)\sum_{i=1}^{k} f_i (u_i - \bar{u})^2} = 0.352$

d) $800\bar{u} = 7028$

$800(\bar{u} + 2s_u) = 7591.2$

Depends on cost of nails as well as time and distance required if too few nails are purchased.

④ a) $\bar{x} = \frac{\sum x}{n} = 1.335$

$s_x^2 = \left(\frac{n}{n-1}\right) \sum (x_i - \bar{x})^2 = 0.003971$

$s_x = \sqrt{s_x^2} = 0.0630$

b)