Questions in Section 4 Pg. R-61

# 1. really is (good, bad)
   system says (good, bad)
   use 2x2 contingency table

$$P(\text{really is bad} \mid \text{system says bad}) = \frac{98}{395} \approx 25\%$$

$$P(\text{really is good} \mid \text{system says good}) = \frac{9603}{395} \times 2 = 9605$$

$$P(\text{system says good} \mid \text{really is good}) = \frac{97\%}{\text{given}}$$

$$P(\text{system says bad} \mid \text{really is bad}) = 98\%$$

# 2. (a) pop.
   possible esc. riders at Pania during (morning) rush hour

$$N = ?$$

$$\text{Mean } \mu = 158 \text{ lb}.$$  
$$\text{SD } \sigma = 33 \text{ lb.}$$

sample
   the observed people on esc.

$$\text{weight}$$

$$\text{like 555 (± 33 lb)}$$

$$\text{like 220}$$

$$\text{like 330}$$

$$\text{like 440}$$

$$\text{Sum } \beta = ?$$

$$\text{(ex: 30,400 lb)}$$

$$n = 192$$

imag.
   possible values of $$\beta$$

$$\text{long run: EV of } \beta = 30,336 \text{ lb}$$

$$\text{long run SD: SE of } \beta = 457 \text{ lb}$$

$$\text{long run hist:}$$

$$\text{SE}$$

$$\text{EV}$$

$$\beta$$

$$\text{hist}$$

$$\text{long right end}$$

$$\text{pop. hist}$$

$$\text{men, women, long right end}$$

$$\text{check \_\_\_ \_ }$$

$$P(\text{overload}) = P(\beta > 31,400 \text{ lb}) = ?$$

$$\text{E}_{\text{pop}}(\beta) = n \cdot \mu = 192 \times 158 \text{ lb} = 30,336 \text{ lb}$$

$$\text{SE}_{\text{pop}}(\beta) = 63 \sqrt{n} = 63 \sqrt{192} = 457 \text{ lb}$$

(c) 31,400 + 600 = 32,000