

Questions in Section 4 Pg. R-61

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

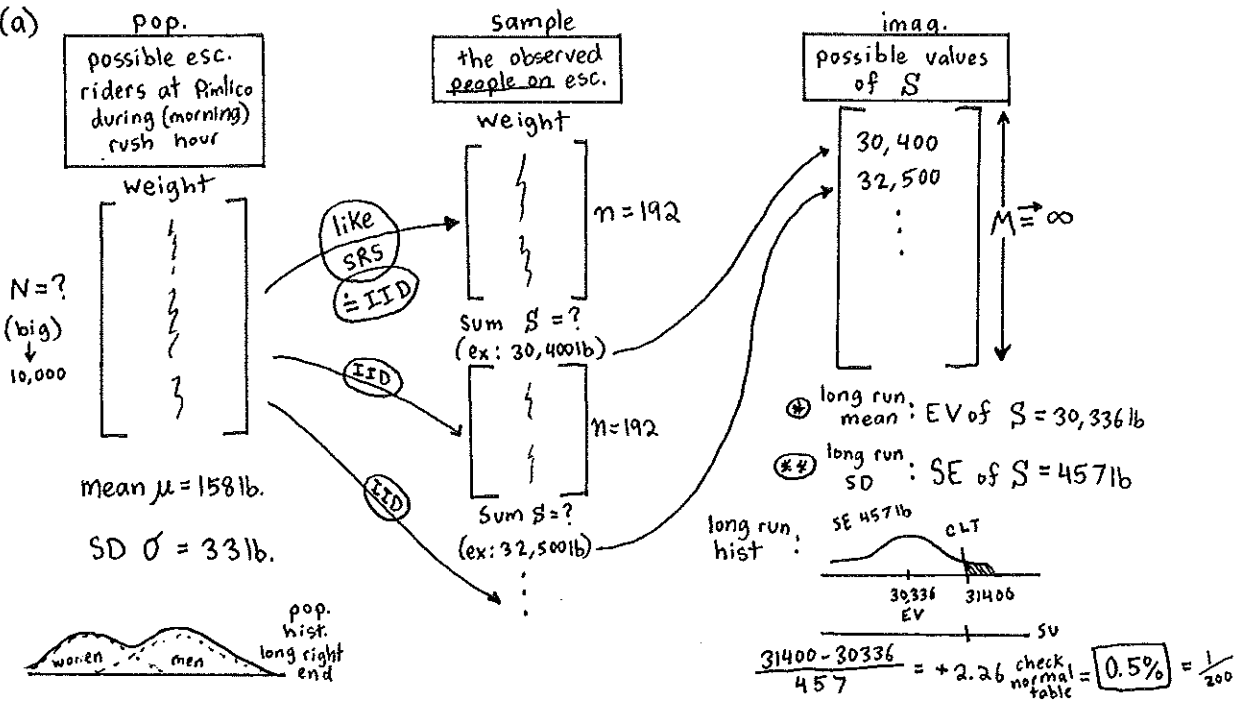
	truth really is		
	good	bad	
what system says	good	bad	
	9603 ✓	x 2	9605
	x 297	98 ✓	395
	9,900	100	10,000 imaginary transactions

$P(\text{really is bad}) = 1\%$ (← unconditional probability)
 $P(\text{system says good} | \text{really is good}) = 97\%$ (← conditional probabilities)
 $P(\text{system says bad} | \text{really is bad}) = 98\%$ (given)

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

#2. (a)

ample =
ie observed
blank



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

$E_{IID}(S) = n \cdot \mu = (192)(158 \text{ lb}) \approx 30,000 \text{ lb} = 30,336 \text{ lb}$

$SE_{IID}(S) = \sigma \sqrt{n} = (33 \text{ lb}) \sqrt{192} \approx 450 \text{ lb} = 457 \text{ lb}$

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