

HW #1

- 1.4 - plot bar graphs of defective versus non-defective parts produced - descriptive statistic
- test whether the proportion of defectives is acceptable - inferential statistics
- 2.2 make histogram, check if outliers exist.
- 2.38 almost equal proportion in each category, most in Family Practice, least in General Practice.

HW #2

- 3.8 compute the descriptive statistics, if the distribution is symmetric use the sample mean as the measure of center, if the distribution is skewed use the sample median as the measure of center.
- 3.18 Compute \bar{x}_1, s_1 and \bar{x}_2, s_2 then compute CV_1 and CV_2 to compare the variability between groups.

3.20 Compute the descriptive statistics for the dataset using Minitab Statistics > Descriptive Statistics > Descriptive Statistics.

$$z = \frac{x - \mu}{\sigma}$$

3.40 make a boxplot comment.

3.50 a) make a histogram, is the distribution skewed if so use median, if symmetric use mean.

b) compute range IQR

c) $s^2, s.$

d.) Texaco $z = \frac{x - \bar{x}}{s}$

Exon Mobil $z = \frac{x - \bar{x}}{s}$

e.) compute skewness

4.10 a) $P(A \cup F) = .13 + .28 - .03 =$

b) $P(E \cup B) = .72 + .16 - .04$

c) $P(B \cup C) = .16 + .33$

d) $P(E \cup F) = .72 + .28 = 1$


HW#3

- 4.2
- a) $X \cup Z = \{1, 3, 7\}$.
- b) $X \cap Y = \{7, 9\}$.
- c) $X \cap Z = \{1, 3, 7\}$.
- d) $X \cup Y \cup Z = \{1, 2, 3, 4, 5, 7, 8, 9\}$
- e) $X \cap Y \cap Z = \{7\}$
- f) $(X \cup Y) \cap Z = \{1, 2, 3, 4, 5, 7, 8, 9\} \cap Z$
 $= \{1, 2, 3, 4, 7\} = Z$.
- g) $(Y \cap Z) \cup (X \cap Y) = \{2, 4, 7\} \cup \{2, 7, 9\}$
 $= \{2, 4, 7, 9\}$.
- h) $X \text{ or } Y = X \cup Y = \{1, 2, 3, 4, 5, 7, 8, 9\}$.
- i) $Y \text{ and } X = Y \cap X = \{2, 7, 9\}$.

4.6. 10^7

4.12 $P(L) = .75$ $P(M) = .78$ $P(L \cap M) = .61$

a) $P(M \text{ or } L) = P(M \cup L) = P(M) + P(L) - P(M \cap L)$
 $= .78 + .75 - .61 = \text{○}$

b) $P(M \text{ or } L, \text{ no both}) =$
 $= P(M) - P(M \cap L) + P(L) - P(M \cap L)$ 
 $= .78 - .61 + .75 - .61 =$

c) $P(\overline{M \cup L}) = 1 - P(M \cup L)$
 $= 1 - \text{○}$

$$4.16 \quad a) \quad P(E \cap B) = .09$$

$$b) \quad P(C \cap F) = .06$$

$$c) \quad P(E \cap D) = 0$$

$$4.22 \quad P(F) = .6 \quad P(G) = .29 \quad P(F \cap G) = .13$$

$$a) \quad P(F \cup G) = P(F) + P(G) - P(F \cap G) \\ = .6 + .29 - .13 = \textcircled{.76}$$

$$b) \quad P(\overline{F \cup G}) = 1 - P(F \cup G) \\ = 1 - \textcircled{.76} = .24$$

$$c) \quad P(\overline{F} \cap G) = P(G) - P(F \cap G) \\ = .29 - .13 = .16$$

$$d) \quad P(F \cap \overline{G}) = P(F) - P(F \cap G) \\ = .6 - .13 = .47$$

HW #4

5.20

 $\lambda = 5.6$

$X = \#$ days exceed standards
per 3-week

$$X \sim \text{Poi}(\lambda)$$

$$a) \quad P(X=0)$$

$$b) \quad P(X=6)$$

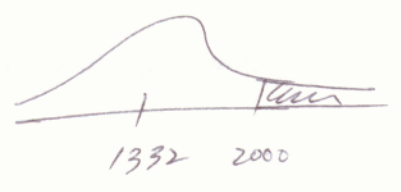
$$c) \quad P(X \geq 15)$$

very, very bad day.

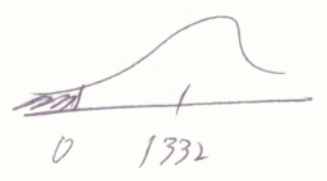
6.10 X = amount of tax returned.

$X \sim \text{Normal } \mu = 1332 \quad \sigma = 725$

a) $P(X > 2000) = P(Z > \quad)$



b) $P(X < 0)$



c) $P(100 < X < 700) =$

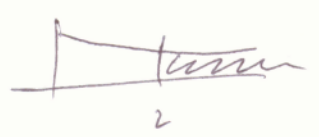


6.30 X = # of unscheduled arrivals

$X \sim \text{Poi}(\lambda = 1.12) \quad T \sim \text{Exp}(\lambda)$

a) $\mu = \frac{1}{\lambda} = \frac{1}{1.12}$

b) $P(X > 2)$



c) $\int_2^{\infty} P(T < 10) \frac{1}{2} dt$

HW #5

7.2 IP Name Sex Age education level

1

2

3

⋮

⋮

N = 20

sample n = 6

how representative?

$$P(M) = \frac{\# M}{6}$$

$$P(M) = \frac{\# M}{20}$$

compare ...

$$\hat{P}(\text{20 year olds}) = \frac{\# \text{20 yrs old}}{6}$$

$$P(\text{20 years old}) = \frac{\# \text{20 yrs old}}{20}$$

compare ...