

3.13: Bringing It Together- Homework

123. In a previous year, the weights of the members of the **San Francisco 49ers** and the **Dallas Cowboys** were published in the *San Jose Mercury News*. The factual data are compiled into Table 3.13.1

Shirt #	≤ 210	211–250	251–290	$290 \leq$
1–33	21	5	0	0
34–66	6	18	7	4
66–99	6	12	22	5

Table 3.13.1

For the following, suppose that you randomly select one player from the 49ers or Cowboys.

If having a shirt number from one to 33 and weighing at most 210 pounds were independent events, then what should be true about $P(\text{Shirt} \# 1 - 33 | \leq 210 \text{ pounds})$?

124. The probability that someone develops cancer during their lifetime is 0.4567 . The probability that a person has at least one false positive test result (meaning the test comes back for cancer when the person does not have it) is 0.51 . Some of the following questions do not have enough information for you to answer them. Write "not enough information" for those answers. Let C = a person develops cancer and P = person has at least one false positive.

- $P(C) =$
- $P(P | C) =$
- $P(P | C') =$
- If a test comes up positive, based upon numerical values, can you assume that person has cancer? Justify numerically and explain why or why not.

125. Given events G and H : $P(G) = 0.43$; $P(H) = 0.26$; $P(H \cap G) = 0.14$

- Find $P(H \cup G)$.
- Find the probability of the complement of event $(H \cap G)$.
- Find the probability of the complement of event $(H \cup G)$.

126. Given events J and K : $P(J) = 0.18$; $P(K) = 0.37$; $P(J \cup K) = 0.45$

- Find $P(J \cap K)$.
- Find the probability of the complement of event $(J \cap K)$.
- Find the probability of the complement of event $(J \cup K)$.

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