

HW 5.3 Part A pg 311 57-60, pg 329-330 prob 63, 65, 67, 69, 73

(57) $.68 + 2x = 1$ $x = .16$ C

(58) $P(7 \text{ or greater}) = 3/10$ D

(59) $P(\text{neither fish nor eggs}) = 8/20 = .4$ C

(60) $P(\text{natural}) = P(7 \text{ or } 11) = 4/36 + 2/36 = 8/36$ C

(63) a) $P(\text{almost certain} | \text{male}) = \frac{P(\text{almost certain} \cap \text{male})}{P(\text{male})} = \frac{597}{2459} \approx .2428$

b) $P(\text{female} | \text{some chance but probably not}) = \frac{P(\text{f and s.c.pn})}{P(\text{s.c.pn})} = \frac{426}{712} \approx .5983$

(65) a) $P(\text{good chance} | \text{female}) = \frac{663}{2367} \approx .2801$

b) $P(\text{good chance}) = \frac{1421}{4824} \approx .2944$

c) Events "a good chance" and "female" are not independent since $P(\text{good} | \text{female}) \neq P(\text{good chance})$

$$(67) \quad a) \quad P(D|F) = \frac{P(D \cap F)}{P(F)} = \frac{13}{17} = .7647$$

76.47% of the females are Democrat.

$$b) \quad P(F|D) = \frac{P(F \cap D)}{P(D)} = \frac{13}{60} = .2167$$

21.67% of the Democrats are female.

$$(69) \quad P(D) = \frac{60}{100} = .60$$

$$P(D|F) = \frac{13}{17} = .7647$$

Since $P(D) \neq P(D|F)$, D and F are not independent.

(73) T: person over 6 ft tall
B: person professional basketball player

$$P(B) < P(B|T) < P(T) < P(T|B)$$

There are very few professional basketball players, so $P(B)$ should be the smallest. If you are a professional basketball player, it is most likely you are tall (greater than choosing someone at random who is over 6 feet).