AP Statistics Chapter 14 - 15 Review

****ANSWERS ONLY** (for explanations, please come in for tutorials)**

1. "A" and "B" are independent: $P(A \cap B) = 0.18$, $P(A \cup B) = 0.72$, $P(A|B) = 0.6$
   "A" and "B" are disjoint: $P(A \cap B) = 0$, $P(A \cup B) = 0.9$, $P(A|B) = 0$
   "A" and "B" are dependent: $P(A \cap B)$, $P(A \cup B)$, and $P(A|B)$ cannot be determined.

2. "A" and "B" are independent: $P(A \cap B) = 0.2065$, $P(A \cup B) = 0.7335$, $P(A|B) = 0.35$
   "A" and "B" are disjoint: $P(A \cap B) = 0$, $P(A \cup B) = 0.94$, $P(A|B) = 0$
   "A" and "B" are dependent: $P(A \cap B)$, $P(A \cup B)$, and $P(A|B)$ cannot be determined.

3. $P(A \cup B) = 0.5$

4. C
5. B
6. A
7. C
8. B
9. D
10. A
11. A
12. D
13. B

14. Probably 0.5 (or whatever the probability of having a girl was for each of the other 5 babies)

15. a) 0.3 b) 0.1

16. a) 0.0909 b) 0.3182 c) 0.2879

17. a) 0.4540 b) 0.3535 c) No.

18. a) 0.25 b) 0.75 c) No.

19. a) 0.3 b) 0.6 c) 0.325 d) 0.9231

20. a) E(X) = 1.36 *(it is NOT okay to round this to a whole number!)*

    b) If Savannah encountered a <u>large number</u> of piñatas, the mean (average) number of hits required to break open the piñata would be about 1.36. (or "in the long run, this is the average number of hits required for Savannah to break open the piñata")

    c) Var(X) = 0.3504, SD(X) = 0.5919

21. a) E(X) = 2.07 *(it is NOT okay to round this to a whole number!)*

    b) In the looooooong run (if Katelyn drives to work for a large number of days), Katelyn can expect to hit an average of 2.07 red lights per day.

22. a) E(X) = 1.2, SD(X) = 0.7483

    b) E(X) = 280, SD(X) = 87.178