

### Chapter 3 Review (FOR EACH PROBABILITY, USE 3 SIGNIFICANT DIGITS)

**(#1-3) There is a large gumball machine at the mall that contains 200 gumballs, 13 of which are red. (assume independence: 5 gumballs is less than 5% of 200)**

1. What is the probability of buying 5 gumballs and getting at least 1 red?
2. Robert got 3 gumballs from the machine. What is the probability that all 3 were red?
3. Ariela ate 2 gumballs. What is the probability that only the second one was red?
4. How many different 6 digit numbers can be made if the first digit must be odd and the last digit must be even?
5. Out of 30 people, what is the probability that at least one of them will have a first name beginning with B?
6. In the Del Valle lottery, 3 numbers from 1-67 are drawn monthly and each student gets one ticket. What is the probability you will pick all 3 numbers and win a prize?
7. How many different ways can 3 out of 10 students be put in a line?
8. How many different ways can you arrange all the letters in word **international**?
9. American Eagle shipped 3,000 shirts last month to its Sawgrass Outlet. 5% of the shirts have a rip in them. 25 of the shirts were randomly selected and donated to Kids In Distress. What is the probability that at least one of the shirts was ripped? (assume independence)
10. Write the sample space for flipping a coin, then rolling a die.
11. If 4 students are selected randomly, what is the probability that their names end with the same letter? (Does the first student's probability matter?)
12. 65% of AYSO soccer players are males. If 10% of female players and 45% of male players head the ball at least once a game, what percent of the players head the ball during a game? (Hint: Make a tree diagram)
13. If 3 randomly selected students out of 3900 are chosen, what is the probability that all of them were born on a Friday? (Is it safe to assume independence?)

**Assume that 88% of my students work. If I select 6 of them at random, what is the probability of each described outcome? Show your work.**

14. All of the students work.
15. None of the students work.
16. At least one of the students works.
17. All of the students do not work.

**Blockbuster Video has 75 Wii games and 60 PS2 games. 20 of the Wii games and 18 of the PS2 games are new. Find each of the probabilities if a game is selected at random. (Make a chart).**

18.  $P(\text{old PS2 game})$
19.  $P(\text{Wii game or new game})$
20.  $P(\text{Wii game} \mid \text{old game})$
21.  $P(\text{old game and Wii game})$
22.  $P(\text{old game} \mid \text{PS2})$
23.  $P(\text{old game or PS2 game})$

1. .285
2. .000275
3. .0608
4. 250,000
5. .692
6. .0000209
7. 720
8. 129729600
9. .723
10. { H1, H2, H3, H4, H5, H6, T1, T2, T3, T4, T5, T6 }
11. .0000569
12. 32.75%
13. .00292
14. .464
15. .00000299
16. 1
17. .00000299
18. .311
19. .689
20. .567
21. .407
22. .7
23. .852