HW5 – Chapter 15

The table below summarizes a game of dice:
a player gets 0 points for a 1, 2, or 3;
5 points for a 4 or 5;
50 points for a 6.

Y = number of points.

Roll	1,2,3	4,5	6
Y	0	5	50
$P(Y)$	$\frac{3}{6}$	$\frac{2}{6}$	$\frac{1}{6}$

1.What is the expected value E(Y)?
A. 15 B. 10 C. 25 D. 35

2. What is the standard deviation?
A. 325 B. 32.5 C. 18.03 D. 180.3

Chapter 16

Mount Sinai Hospital calculated that approximately 11% of the population in the United States has blood of type A. There is a blood drive at your university.

We want to know how many donors should Mount Sinai Hospital expect to collect from *until* it gets a donor with blood of type A.

3. Which probability model should you use?
A. geometric B. binomial C. normal D. exponential

4. How many blood donors should the Mount Sinai Hospital expect to collect from until it gets a donor with Type A blood?
A. 7.2 B. 18.2 C. 10 D. 9.1

5.What is the probability that the tenth blood donor is the first donor with Type A blood?

A. 0.0246 B. 0.0385 C. 0.25 D. 0.45

In total, 150 donors show up at Mount Sinai. Assuming this is a typical number of donors for this kind of event, what would be the mean and standard deviation of the number of donors who have Type A blood?

6. Which probability model should you use?

A. geometric B. binomial C. normal D. exponential

7. What's the mean?

A. 16.5 B. 8.25 C. 33.0 D. 66.0

8. What's the standard deviation?

A. 3.83 B. 6.92 C. 4.44 D. 9.87

Chapter 17

Orange flavored TicTacs are supposed to make up 30% of the TicTacs sold. In a large box of 250 differently flavored TicTacs, we want to know the probability that we get at least 25% orange flavored TicTacs.

9.Is the 10% condition satisfied?

A. Yes, because 25% is 10% of 250
B. Yes, because 250 is less than 10% of all TicTacs
C. No, because 30% is more than 10% of 250
D. No, because 250 is more than 10% of all TicTacs

10.What's the total number of "successes" in this example?
A. 175 B. 75 C. 25 D. 45

11.What's the total number of "failures" in this example?
A. 175 B. 75 C. 25 D. 45

12. Is the success/failure condition satisfied?
A. Yes B. No

13.What's the mean of this sampling model for proportions?
A. 0.50 B. 0.20 C. 0.30 D. 0.70

14.What's the SD of this sampling model for proportions?
A. 0.016 B. 0.023 C. 0.34 D. 0.029

15.What's the model for $\hat{p}$?
A. $N(0.30,0.029)$
B. $N(0.023,0.70)$
C. $N(0.016,0.30)$
D. $N(0.50,0.34)$

16.What's the z-score corresponding to 25%?
A. 1.22 B. -1.73 C. 0.35 D.-2.30

17. According to the Normal model, what's the probability that our bag contains at least 25% orange flavored TicTacs? (draw a picture of the normal model)
A. 35% B. 92.3% C. 99.9% D. 95.8%