Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 4: Probability Test Review

1. When rolling 3 dice, find the following probabilities

 a: the number 2 is shown on all three dice b: the number 2 is not on any of the 3 dice

2. Find the probability that when a natural number is selected from the first 20 natural numbers it will be prime.

3. There are 145 freshmen, 135 sophomores, 132 juniors, and 115 seniors in a school.

 a: What is the probability that a student is a freshman or a sophomore?

 b: What is the probability that a student is not a senior?

4. The probability that I will go golfing is 35% and the probability of going to the movie is 25%. What is the probability that I will do both?

5. The probability a girl plays basketball is 14%, volleyball is 17%, and both is 5%. Find the following probabilities.

 a: P(girl does not play basketball)

 b: P(girl plays basketball or volleyball, but not both)

 c: P(the girl plays neither sport)

6. Use the following table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | General Motors | Hyundai | Porsche |
| Silver | 15 | 10 | 10 |
| Green | 25 | 20 | 5 |

a: P(car is silver or a Porsche)

b: P(car is not a Hyundai)

c: P( car is not green and a General Motors)

d: P(Hyundai/green)

e: P(Silver/General Motors)

7. Find the following probabilities. A – C are with replacement D – F are without replacement.

 a: P(two 8s are drawn from a deck of cards)

 b: P(diamond is drawn, then a face card)

 c: P(a queen and a king is drawn)

 d: P(4, then a 7)

 e: P(3, then a 3)

 f: P(jack and 9)

8. From a survey of 18 students it is found that 9 like language arts, 12 like mathematics, 5 like language arts, and mathematics, and 2 like neither.

 a: Draw a Venn diagram to represent the information

 b: P(likes math or language arts)

 c: P(student likes math, given they like language arts)

 d: P(student likes language arts, given they like math)

9. Suppose the probability that it will rain on any given day is 15%. If three days are selected at random, find the probability that it will rain on at least one of those days.

10. 113 randomly selected persons were asked what their preferred summer holiday destination was. All of the respondents travelled to the beach, to the mountains, or to another country.

57 respondents travelled to the beach.

21 respondents visited the mountains.

76 respondents visited another country.

Only 7 respondents visited the mountains and visited the beach, but not another country.

10 respondents visited the beach and another country, but not the mountains.

12 respondents visited all three locations.

a. Represent this information on a Venn Diagram. [4 marks]

b. Calculate the number of respondents who: [4 marks]

* Travelled to the mountains and visited another country but did not go to the beach.
* Only visited the mountains

Sana indicated in her response that she travelled to another country for her summer vacation.

c. Find the probability that she also visited the beach. [2 marks]

Two other respondents were chosen at random from the 113 students.

d. Find the probability that: [7 marks]

* Both respondents visited the beach.
* Only one of the respondents visited the beach.