**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_Date\_\_\_\_\_\_**

**AMDM Cumulative Test (Unit 1, Unit 2, and Unit 3a) Study Guide (R)**

Terri gave a survey to 139 students at her school. In the survey, she asked students what type of food they liked: meat, vegetables, both, or neither.

72 Students like both meat and vegetables. 33 students like vegetables only. 15 students like neither.

**Meat**

**Vegetables**

1. How many students like meat only?

2. What is the probability that students like only meat and only vegetables but not both?

3. What is the probability that students like meat?

4. What is the probability that students like neither meat nor vegetables?

5. What is the probability that someone likes vegetables given that they do not like meat?

6. The figure below shows a 16:9 aspect ratio TV screen.

1. If the TV has an 80 inch screen, find the height of the screen.
2. Find the width of the screen.
3. Find the area of the screen.

**A small park measures 45 yards by 45 yards. The park is full of people waiting for a concert to begin. It is estimated that there are 13 people in each 2.5 feet by 2.5 feet square.**

7. Approximately how many people are at the concert?

8. What would you need to change the check digit to in order to make this a valid credit card number? 5254 0213 6294 735d

**Johnny goes to his favorite fast food restaurant, McDonald’s, on Friday to celebrate the end of the week. He wants to take advantage of the all-day breakfast. He is trying to decide between an Egg McMuffin; an Egg McGriddle; a Bacon, Egg, and Cheese Biscuit; a Sausage Burrito; Hot Cakes, and a Fruit and Yogurt Parfait. He can get Hash Browns, Fruit, or Fruit and Maple Oatmeal. He’s also trying to decide between Coke and Diet Coke to drink. (Tree diagram may be helpful.)**

9. How many different combinations are possible?

10. What is the probability of getting an Egg McMuffin or a Bacon Egg and Cheese Biscuit, hash browns, and a coke?

11. What is the probability of getting Hot Cakes and a Coke?

12. What is the probability of not choosing a Sausage Burrito and getting a Diet Coke?

**Malcolm is playing a carnival game that requires him to roll an 8-sided die and then spin the arrow on a spinner that is divided into six equal parts. One part is blue, one is red, one is yellow, one is purple, one is orange and one is green. (Hint: it may be helpful to draw a tree diagram that shows all the possible outcomes.)**

**If he rolls a 7 and spins a blue or rolls an 8 and spins a green, he will win $5. The game costs $3 to play.** *(MAMDMD1.a.c)*

13. What is the probability Malcolm will roll a 7 or 8?

14. What is the probability that he will spin a color other than green or blue?

15. What is the probability that he will roll a 7 or 8 and spin green or blue?

16. What is the expected value for each turn of the game?

**The following area model shows the probability of getting a pumpkin or not getting a pumpkin when people enter a maze.**

17. What is the probability of getting a pumpkin?

18. What is the probability of not getting a pumpkin?

19. If 250 people go through the maze, how many pumpkins will probably be given away?

20. Mr. Abel is interested in seeing the effects of playing on your phone in class. To do this, he observed his AMDM class and recorded whether students were playing on their phones during class time. There are 28 students in his class.

|  |  |  |
| --- | --- | --- |
|  | **A in the class** | **No A in the Class** |
| **Male students in AMDM**  | 4 | 11 |
|  **Males on their phone** | 1 | 8 |
| **Females in AMDM** | 7 | 6 |
|  **Females on their phone** | 2 | 4 |

1. Draw and label a Venn diagram of the data.
2. What is the probability of choosing a random student who is on their phone?
3. What is the probability of picking a student on their phone **given** that they have an A in the class?