**L3: Outcomes of Independent Events** Name:

Ma8 U4 Probability

**What are all the possible outcomes for the lunch special?**

LUNCH SPECIAL - $5.95

*Choose one appetizer, one main meal, and one drink*

**Appetizers**

Chicken soup or Salad

Main Meal

Cheeseburger; hot dog; or vegetable lasagna

Drinks

Milk, chocolate milk, apple juice, or sparkling water

*How will you organize your work so that you list ALL possible outcomes?*

**Determine the number of possible outcomes for each combination given in the table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of Choices for Item 1** | **Number of Choices for Item 2** | **Number of Choices for Item 3** | **Outcomes** |
| 2 types of ice-cream cones | 3 flavours of ice cream | None |  |
| 5 shirts | 4 pants | None |  |
| 5 models of sports cars | 3 different colours | None |  |
| 4 models of computers | 4 models of monitors | None |  |
| 2 types of ice cream cones | 4 flavours of ice cream | 3 types of topping |  |

How could you calculate the total number of outcomes using the number of choices for each item?

Total

Number

of Outcomes

**Example 1: Determine the Total Number of Outcomes from Two Events**

Callie flips a coin and rolls a standard six-sided number cube. How many possible outcomes are there?

**Method 1: Create a table**

**Method 2: Use Multiplication**

**Your turn:** A café offers four types of sandwiches (egg salad, tuna, ham, or turkey) on one of three types of bread (white, rye, or whole wheat). What are the possible sandwich combinations available? Find your answer using two different methods.

**Example 2: Determine the Total Number of Outcomes from Three or More Events**

A coin is flipped, a spinner divided into three equal regions is spun, and a four-sided die numbered 1, 2, 3, and 4 is rolled.

1. Is a tree diagram or a table the best method to determine the total number of outcomes? Explain your choice
2. Use your method to determine all the possible outcomes.
3. Check your total number of outcomes using multiplication

**Your turn again…** Now the café wants to offer two choices of side orders (cookies or chips) with their four types of sandwiches on 3 different types of bread.

1. How many possible combinations are offered by the café?
2. Check your answer using a different method.