Draw a tree diagram to show all possible outcomes for each situation. State the total number of possible outcomes.

1) The spinner below is spun 2 times.


Total \# of Outcomes: $\qquad$
2) Two dice are rolled

Total \# of Outcomes: $\qquad$
3) Choosing a bagel with one type of cream cheese from the list shown in the table.

| Bagels | Cream <br> Cheese |
| :---: | :---: |
| Plain | Plain |
| Blueberry | Chive |
| Raisin | Sun-dried <br> Tomato |
| Garlic |  |

Total \# of Outcomes: $\qquad$
4) A sandwich consisting of one type of meat and one type of bread
5) A restaurant offers three types of pasta with two types of sauce and a choice of meatballs or sausage.
6) Andrew has a choice of blue, yellow, white or striped shirt with a choice of black, navy, or tan pants.

Total \# of Outcomes: $\qquad$

Total \# of Outcomes: $\qquad$
7) Tossing a coin and spinning the spinner below


Total \# of Outcomes: $\qquad$
8) Choosing a purple, green, black, or silver bike having $10,18,21$, or 24 speeds.

| Meat | Bread |
| :---: | :---: |
| Ham | Rye |
| Turkey | Sourdough |
|  | White |

$\qquad$
$\qquad$

Use the Fundamental Counting Principle to find the total number of possible outcomes for each situation. You DO NOT need to draw a tree diagram.
9) A coin is tossed and a die is rolled
10) Four coins are tossed
11) A number from $1-50$ and a color from 8 colors are chosen
16) Two coins are tossed and a die is rolled
17) A car comes with two or four doors, a four or six-cylinder engine and a choice of 6 colors.
18) A quiz has 5 true or false questions.
12) Picking a number from 1 to 5 and choosing the color red, white or blue.
13) Choosing a letter from the word SPACE and choosing a consonant from the word MATH.
14) Each spinner is spun once.

15) School sweatshirts come in four sizes and four colors
22) Choosing from a comedy, horror, or action movie each shown in four different theaters.
20) Number of different sandwich and side combos you can have using the table below.

| Sandwiches | Sides |
| :---: | :---: |
| Ham | Pasta Salad |
| Turkey | Fruit Cups |
|  | Potato |
| Roast Beef | Chips |
| Tuna Salad | Side Salads |
| Vegetarian |  |

21) Picking a month of the year and a day of the week.
22) There are 4 answer choices for each of five multiple-choice questions on a quiz.

For problems 23 and 24, set up an equation and solve for $x$.
23)
24)


