

**12-7 Probability**

Write down the sample space for each situation:

1. A sandwich shop has three types of sandwiches: ham, turkey, and chicken. They also have two types of bread: sourdough and wheat.
2. The chess club must decide when to meet for practice. The possible days are Tuesday, Wednesday, or Thursday. The possible times are 3, 4, or 5 pm.

HS TS CS  
HW TW CW

T3 W3 Th 3  
T4 W4 Th 4  
T5 W5 Th 5

Answer each problem as indicated. Be sure to make your work/logic clear.

3. A spinner has 8 evenly-sized spaces, with numbers 1 through 8. If you spin this spinner once, find ... 3, 4, 5, 6, 7, 8

$$P(\text{a number greater than 2}) = \frac{6}{8} = \boxed{\frac{3}{4}}$$

4. When you roll a fair 12-sided die, it will show a number from 1 to 12, each with an equal probability. If you roll this kind of die, what is ... 1, 2, 3, 4

$$P(\text{a number less than 5}) = \frac{4}{12} = \boxed{\frac{1}{3}}$$

In a standard deck of cards there are four each of 13 different cards (Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, jack, queen, king). There is one of each of these cards in four different suits (hearts, diamonds, clubs, and spades). Hearts and diamonds are red, clubs and spades are black. Jacks, queens and kings are called face cards. Using this information, if you draw a random card from this deck, find ...

$$5. P(\text{face card}) = \frac{12}{52} = \boxed{\frac{3}{13}}$$