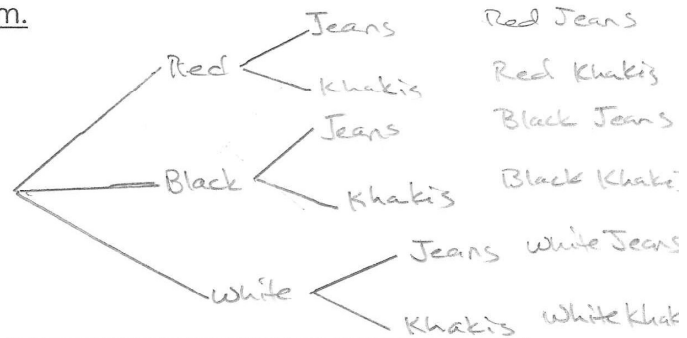


**1. Chick-fil-A:** For a kid's meal, you have a choice of 2 meals (nuggets or filet strips), 2 sides (fries or fruit cup), and 4 drinks (soda, lemonade, milk, or juice). You want to eat a different kid's meal every day. How many days can you order a different meal?  $2 \cdot 2 \cdot 4 = \boxed{16}$

**2. Outfits:** Your outfit can be made up of 3 shirts (red, black and white) and 2 pants (jeans and khakis). Draw a diagram.

Number of Outcomes 6  
 P(red shirt and khaki pants)  $\frac{1}{6}$   
 P(jeans)  $\frac{3}{6} = \frac{1}{2}$   
 P(not black shirt)  $\frac{4}{6} = \frac{2}{3}$



**3. Passwords:** You make a 3 letter password; you can use letters more than once. How many different outcomes are there for your password? Do you think it's reasonable for teenagers to say that someone just happened to figure out their password?

26 letters using each letter possibly more than once.

$26 \cdot 26 \cdot 26 = \boxed{17,576}$  Guessing a password is not reasonable.

You make a password using letters (A-Z) and numbers (0-9). How many codes can be created for a 3 space password? Why do some websites require you to use numbers in your passwords? 26 letters A-Z and 10 numbers 0-9

$26 + 10 = 36$

$36 \cdot 36 \cdot 36 = \boxed{46,656}$  Adding numbers to a password increases the number of possibilities.

**Give all answers as reduced fractions.**

Find the probability of each outcome if a die is rolled. 6 sided die

4. a 1  $\frac{1}{6}$

5. an odd number  $\frac{3}{6} = \frac{1}{2}$   
↳ 1, 3, 5

6. an even number less than 6  $\frac{2}{6} = \frac{1}{3}$   
↳ 2, 4, 6

7. a number less than 3  $\frac{2}{6} = \frac{1}{3}$   
↳ 1, 2

8. a number greater than 6  $\frac{0}{6} = 0$  Not Possible!  
↳ 0

9. a number greater than 0  $\frac{6}{6} = 1$

A **standard deck of 52 cards** has 4 suits (hearts and diamonds are red; clubs and spades are black). Each suit has 13 cards: Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King. The Jack, Queen, and King are called "face cards."

A card is selected at random from a standard deck of 52 cards. What is the probability of selecting:

10. a red card.  $\frac{26}{52} = \frac{1}{2}$

11. an ace.  $\frac{4}{52} = \frac{1}{13}$

12. a red jack.  $\frac{2}{52} = \frac{1}{26}$

13. not a diamond.  $\frac{39}{52} = \frac{3}{4}$   
 $52 - 13 = 39$

14. an even club.  $\frac{5}{52}$

Using the spinner at the right. Find the probability of spinning:

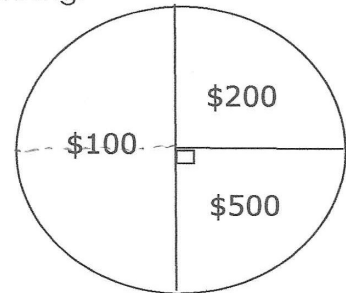
15. \$100  $\frac{1}{2}$

16. \$200  $\frac{1}{4}$

17. less than \$300  $\frac{3}{4}$   
 $\rightarrow 100, 200$

18. more than \$500 Not possible

19. more than \$100  $\frac{1}{2}$



Given a bag of 3 red marbles, 5 blue marbles and 4 green marbles. What is the probability of selecting: Total marbles = 12

20. a green marble  $\frac{4}{12} = \frac{1}{3}$

22. a blue or a red marble  $\frac{5}{12} + \frac{3}{12} = \frac{8}{12} = \frac{2}{3}$   
*or means add*

21. not a blue marble  $\frac{7}{12}$

23. a blue, red or green marble  $\frac{5}{12} + \frac{3}{12} + \frac{4}{12} = \frac{12}{12} = 1$

24. A Bureau of the Census survey of 600 persons in the 18-25 age bracket found that 237 of them smoke. If a person in that age bracket is randomly selected, find the approximate probability that he or she does not smoke.

$600 - 237 = 363$

$\frac{363}{600} \approx .61$