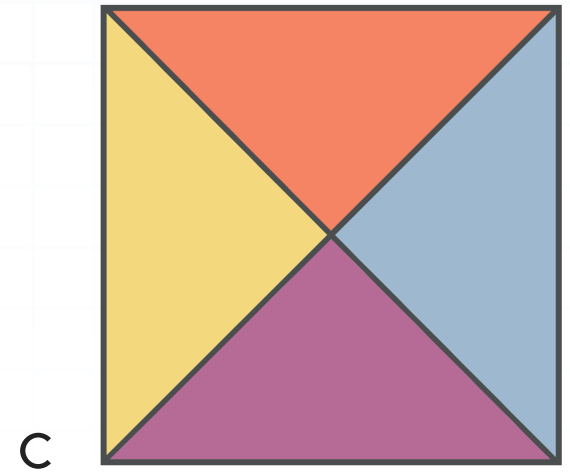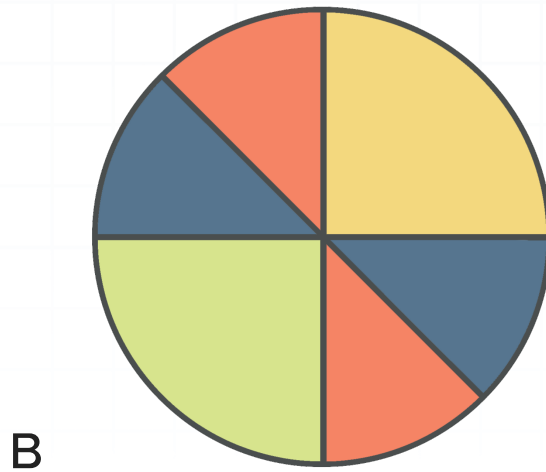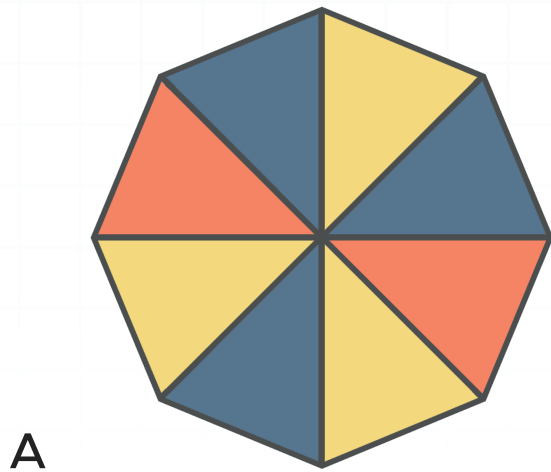**Topic**: Simple probability

Question: Which spinner has a $1/4$ probability of landing on red? Hint: Consider the size of each section, not just the number of sections in each spinner.

Answer choices:

A

B

C

D   All of the spinners have a $1/4$ probability of landing on red.

Solution: D

To find the probability of the octagon spinner landing on red, consider that the triangles are the same size and shape. This means there are 2 out of 8 total ways to land on red.

$$P(\text{red}) = \frac{2}{8} = \frac{1}{4}$$

To find the probability of the circle spinner landing on red, consider that the red parts each make up $1/8$ of the circle, since they are half of a quarter of the circle. We have 2 of them, so

$$P(\text{red}) = \frac{2}{8} = \frac{1}{4}$$

To find the probability of the square spinner landing on red, consider that it's divided into 4 equal triangles, one of which is red.

$$P(\text{red}) = \frac{1}{4}$$

Topic: Simple probability

Question: Brett bought a box of chocolates. 2 of them are coconut, 3 are orange, 4 are caramels, and 1 is raspberry. All of the chocolates look the same. What's the probability that Brett chooses a coconut chocolate?

Answer choices:

A 20%

B 30%

C 50%

D 60%

Solution: A

To answer the question, use the definition of simple probability.

$$P(\text{event}) = \frac{\text{outcomes that meet our criteria}}{\text{all possible outcomes}}$$

In this case, the outcomes that meet our criteria are the 2 coconut chocolates. All possible outcomes can be found by adding all of the types together.

$$2 + 3 + 4 + 1 = 10$$

Therefore, the probability of choosing a coconut chocolate is

$$P(\text{coconut}) = \frac{2}{10} = \frac{1}{5} = 0.2 = 20\,\%$$

Topic: Simple probability

Question: Linel is playing the game Go Fish with her daughter Leah. She needs a picture of a blue whale to win the game. In the pile there are 4 whales, 6 tuna fish, 1 dolphin, and 3 mackerel. To the nearest percent, what is the probability that she draws a whale and wins the game?

Answer choices:

A 7%

B 18%

C 35%

D 29%

Solution: D

Remember the definition of simple probability.

$$P(\text{event}) = \frac{\text{outcomes that meet our criteria}}{\text{all possible outcomes}}$$

In this case, the outcomes that meet our criteria are the 4 whales. All possible outcomes can be found by adding all of the types of cards in the deck together:

$$4 + 6 + 1 + 3 = 14$$

Therefore, the probability of pulling a whale from the deck is

$$P(\text{whale}) = \frac{4}{14} \approx 0.29 \approx 29\,\%$$