

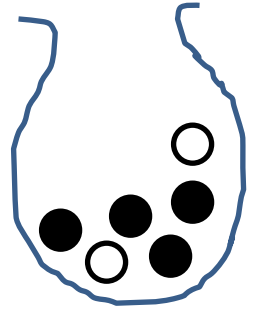


RATIO & PROBABILITY PROBLEMS 7:1

Captain Salamander puts 2 white balls and 4 black balls in a bag.

1) What is the ratio of white balls to black balls? _____

2) Write this ratio in its simplest form _____



He shakes the bag and picks out a ball at random.

3) What is the probability that it is white? _____

4) What is the probability that it is black? _____

He puts the ball back and adds 4 more white balls into the bag and shakes it.



5) What is the ratio of white to black balls now? _____

6) What is the probability that a ball chosen at random will be black? _____

Now Captain Salamander adds 2 red balls into the bag.



7) What is the ratio of red balls to white balls to black balls? _____

8) What is the probability that a ball chosen at random will be red? _____

9) What is the probability that a ball chosen at random will not be white? _____

Captain Salamander now empties the bag, and then refills it with red and white balls in the ratio of 2 red balls for every 3 white balls.

10) If he puts in 6 red balls, how many white balls would there be? _____

11) If he puts in 18 white balls, how many red balls would there be? _____

12) What is the probability that a ball drawn at random from the bag will be white? _____





RATIO & PROBABILITY PROBLEMS 7:1 ANSWERS

Captain Salamander puts 2 white balls and 4 black balls in a bag.

- 1) What is the ratio of white balls to black balls? **2:4**
- 2) Write this ratio in its simplest form **1:2**

He shakes the bag and picks out a ball at random.

- 3) What is the probability that it is white? **$\frac{2}{6}$ or $\frac{1}{3}$**
- 4) What is the probability that it is black? **$\frac{4}{6}$ or $\frac{2}{3}$**

He puts the ball back and adds 4 more white balls into the bag and shakes it.

- 5) What is the ratio of white to black balls now? **6:4 or 3:2**
- 6) What is the probability that a ball chosen at random will be black? **$\frac{4}{10}$ or $\frac{2}{5}$**

Captain Salamander adds 2 red balls into the bag, which now contains 12 balls.

- 7) What is the ratio of red balls to white balls to black balls? **2:6:4 or 1:3:2**
- 8) What is the probability that a ball chosen at random will be red? **$\frac{2}{12}$ or $\frac{1}{6}$**
- 9) What is the probability that a ball chosen at random will not be white? **$\frac{6}{12}$ or $\frac{1}{2}$**

Captain Salamander now empties the bag, and then refills it with red and white balls in the ratio of 2 red balls for every 3 white balls.

- 10) If he puts in 6 red balls, how many white balls would there be? **9**
- 11) If he puts in 18 white balls, how many red balls would there be? **12**
- 12) What is the probability that a ball drawn at random from the bag will be white? **$\frac{3}{5}$**