



## RATIO & PROBABILITY PROBLEMS 1

Write your ratio answers in the form \_\_\_\_ : \_\_\_\_.

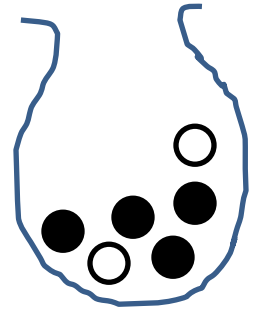
Write your probability answers as a fraction.

**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? \_\_\_\_\_





## RATIO & PROBABILITY PROBLEMS 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**