

Practice 9-2

Experimental Probability

Suppose you observe the color of socks worn by students in your class: 12 have white, 4 have black, 3 have blue, and 1 has red. Find each experimental probability as a fraction in simplest form.

1. $P(\text{white})$ $\frac{3}{5}$ _____ 2. $P(\text{red})$ $\frac{1}{20}$ _____ 3. $P(\text{blue})$ $\frac{3}{20}$ _____
 4. $P(\text{black})$ $\frac{1}{5}$ _____ 5. $P(\text{yellow})$ 0 _____ 6. $P(\text{black or red})$ $\frac{1}{4}$ _____

Use the data in the table at the right for Exercises 7–12.

Find each experimental probability as a percent.

7. $P(\text{fruit})$ 32% $\frac{8}{25}$ 8. $P(\text{granola})$ 8% $\frac{2}{25}$
 9. $P(\text{pretzels})$ 12% $\frac{3}{25}$ 10. $P(\text{carrots})$ 20% $\frac{5}{25}$
 11. $P(\text{not fruit})$ 68% $\frac{17}{25}$ 12. $P(\text{granola or chips})$ 36% $\frac{9}{25}$

Favorite Snack Survey Results

Snack	Number of Students
Fruit	8
Granola	2
Pretzels	3
Chips	7
Carrots	5

13. Do an experiment to find the probability that a word chosen randomly in a book is the word *the*. How many words did you look at to find $P(\text{the})$? What is $P(\text{the})$?

~~Check students' answers.~~

14. Suppose the following is the result of tossing a coin 5 times:

heads, tails, heads, tails, heads

What is the experimental probability for heads?

60% $\frac{3}{5}$

Solve.

15. The probability that a twelve-year-old has a brother or sister is 25%. Suppose you survey 300 twelve-year-olds. About how many do you think will have a brother or sister?

about 75 $300 \times 25\%$

16. a. A quality control inspector found flaws in 13 out of 150 sweaters. Find the probability that a sweater has a flaw. Round to the nearest tenth of a percent.

8.7% $\frac{13}{150}$

- b. Suppose the company produces 500 sweaters a day. How many will not have flaws?

457 sweaters $\frac{137}{150} \times 500$

- c. Suppose the company produces 600 sweaters a day. How many will have flaws?

52 sweaters $\frac{13}{150} \times 600$