

PROBABILITY AND ODDS - HW 1

You spin a spinner that has 15 equal-sized sections numbered 1-15. Find the probability of the following:

1. P(15)

$$\frac{1}{15}$$

2. P(odd number)

$$\frac{8}{15}$$

3. P(even number)

$$\frac{7}{15}$$

4. P(not 5)

$$\frac{14}{15}$$

5. P(less than 5)

$$\frac{4}{15}$$

6. P(greater than 8)

$$\frac{7}{15}$$

7. You roll a die. What is the probability that you will roll a number less than 5?

$$\frac{4}{6} = \frac{2}{3}$$

8. The probability that a spinner will land on a red section is $\frac{1}{6}$. What is the probability that it WON'T land in red?

$$\frac{5}{6}$$

You choose a marble at random from a bag containing 2 red marbles, 4 green marbles, and 3 blue marbles. Find the odds of the following: *total marbles*

9. Odds in favor of red

red : not red

$$2:7$$

10. Odds in favor of blue

blue : not blue

$$3:6 \rightarrow 1:2$$

11. Odds against green

not green : green

$$5:4$$

12. Odds against red

not red : red

$$7:2$$

13. You roll a die. What are the odds that you will roll an even number?

$$3:3 \rightarrow 1:1$$

120 randomly selected students at Roosevelt High School were asked to name their favorite sport. The results are shown in the table. Find the probability that a student selected at random had the given response:

14. P(basketball)

$$\frac{30}{120} = \frac{1}{4}$$

15. P(soccer)

$$\frac{20}{120} = \frac{1}{6}$$

15. P(not football)

$$\frac{86}{120} = \frac{43}{60}$$

16. P(other)

$$\frac{14}{120} = \frac{7}{60}$$

SPORT	# OF RESPONSES
Basketball	30
Baseball	22
Football	34
Soccer	20
Other	14

17. Odds in favor of football

football : not football

$$34:86$$

$$17:43$$

18. Odds against baseball

not baseball : baseball

$$98:22$$

$$49:11$$

19. A meteorologist says that the probability of rain today is 35%. What is the probability that it won't rain?

$$65\%$$

20. The odds are 6 to 1 that the Bengals will win the championship game on Friday. What is the probability that they will win?

$$\begin{array}{l} s \rightarrow 6 \\ f \rightarrow 1 \end{array}$$

prob :

$$\frac{6}{7}$$

State the odds of an event given the probability of the event:

21. $\frac{3}{4}$ $\begin{array}{l} s \rightarrow 3 \\ f \rightarrow 1 \end{array}$

$$3:1$$

22. $\frac{1}{7}$ $\begin{array}{l} s \rightarrow 1 \\ f \rightarrow 6 \end{array}$

$$1:6$$

23. $\frac{5}{8}$ $\begin{array}{l} s \rightarrow 5 \\ f \rightarrow 3 \end{array}$

$$5:3$$

24. $\frac{7}{15}$ $\begin{array}{l} s \rightarrow 7 \\ f \rightarrow 8 \end{array}$

$$7:8$$

State the probability of an event given the odds of the event:

25. $\frac{3}{7}$ $\begin{array}{l} s \rightarrow 3 \\ f \rightarrow 7 \end{array}$

$$\frac{3}{10}$$

26. $\frac{5}{1}$ $\begin{array}{l} s \rightarrow 5 \\ f \rightarrow 1 \end{array}$

$$\frac{5}{6}$$

27. $\frac{6}{11}$ $\begin{array}{l} s \rightarrow 6 \\ f \rightarrow 11 \end{array}$

$$\frac{6}{17}$$

28. $\frac{7}{4}$ $\begin{array}{l} s \rightarrow 7 \\ f \rightarrow 4 \end{array}$

$$\frac{7}{11}$$