Pick-Your Points

Probability

On each page select one problem to answer.
Each problem indicates what it is worth.

1

1 Point for this Problem

Which is more likely, Flip a coin and get Tails or Roll a 6 sided dice and get a 5?

2 Points for this Problem

Which is more likely, Flip 2 coins and both get Tails or Roll a 6 sided dice and get a 5?

3 Points for this Problem

Which is more likely, Flip 3 coins and get all tails or roll two 6 sided dice and get doubles?

2

A bag contains 3 red marbles, 4 blue marbles and 5 green marbles

1 Point for this Problem
You randomly select one marble, what is the probability you get red?

2 Points for this Problem
You randomly select one marble, what is the probability you get a red or a blue?

3 Points for this Problem
You randomly select one marble, what is the probability you do not get red?

3

A bag contains 3 red marbles, 4 blue marbles and 5 green marbles

1 Point for this Problem

You randomly select one marble, record it then put it back and select a second marble, what is the probability you get both reds?

2 Points for this Problem

You randomly select one marble, record it then put it back and select a second marble, what is the probability you get both yellows?

3 Points for this Problem

You randomly select one marble, record it then put it back and select a second marble and put it back, then select a third marble, what is the probability you get all reds?

4

A bag contains 3 red marbles, 4 blue marbles and 5 green marbles

1 Point for this Problem
You randomly select two marbles and do not put anything back, what is the probability you get both reds?

2 Points for this Problem
You randomly select two marbles and do not put anything back, what is the probability you get no reds?

3 Points for this Problem
You randomly select three marbles and do not put anything back, what is the probability you get all reds?

5

An event has four possible outcomes A, B, C, D
$P(A) = 0.25$, $P(B) = 0.3$, $P(C) = 0.4$

1 Point for this Problem
What is the probability that A does not happen?

2 Points for this Problem
What is the probability of D happening?

3 Points for this Problem
What is the probability of C or D happening?

6

An event has four possible outcomes A, B, C, D
$P(A) = 0.25$, $P(B) = 0.3$, $P(C) = 0.4$

1 Point for this Problem
If these are independent events what is the probability of A and B both happening?

2 Points for this Problem
If these are independent events what is the probability of A and D both happening?

3 Points for this Problem
If these are independent events what is the probability of A, B and C all happen?

7

Favorite Shake Flavor

	Boys	Girls	Total
Chocolate	35	20	55
Vanilla	15	30	45
Total	50	50	100

1 Point for this Problem
If a person is selected at random what is the probability they are a Boy?

2 Points for this Problem
If a person is selected at random what is the probability they prefer Vanilla?

3 Points for this Problem
If a boy is selected at random what is the probability they prefer vanilla?

Favorite Type of Movie

	Action	Drama	Total
Age 12-25	40	10	50
Age 25+	24	6	30
Total	64	16	80

1 Point for this Problem

If a person is selected at random what is the probability their favorite is Action?

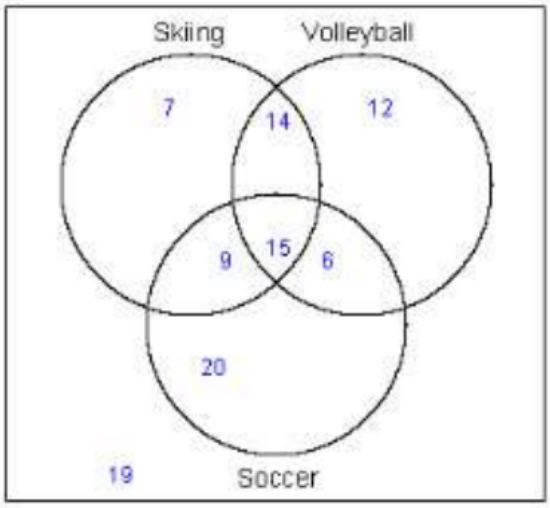
2 Points for this Problem

What is P(Action | Age 25+)

3 Points for this Problem

Based on our table are age and favorite movie type independent?

9

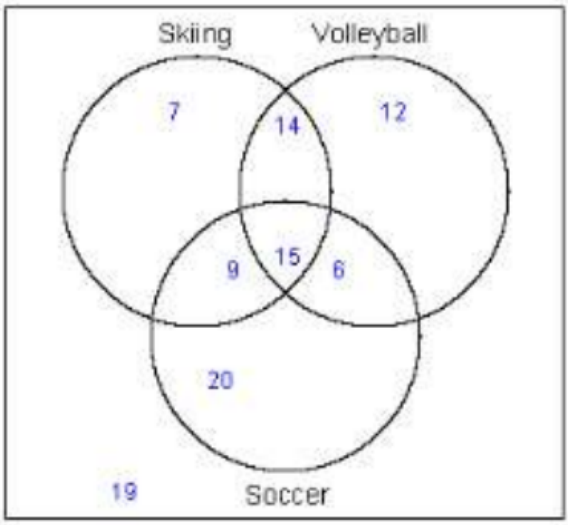


1 Point for this Problem
How many people liked all three activities?

2 Points for this Problem
How many people that liked soccer also liked volleyball?

3 Points for this Problem
A person from this group is selected at random, what is the probability they did not like any of these activities?

10



1 Point for this Problem
If someone that likes volleyball is selected, what is the probability they also like Skiing?

2 Points for this Problem
If someone that likes volleyball is selected, what is the probability they do not like Skiing?

3 Points for this Problem
If someone is selected at random, what is the probability they like Skiing but not soccer?

Answers

Page	Pts	Answer
1	1	flip coin
	2	flip coin
	3	doubles
2	1	1/4
	2	7/12
	3	3/4
3	1	1/16
	2	0
	3	1/64
4	1	1/22
	2	24/44
	3	1/220
5	1	0.75
	2	0.05
	3	0.45

Page	Pts	Answer
6	1	0.075
	2	0.0125
	3	0.03
7	1	1/2
	2	9/20
	3	3/10
8	1	4/5
	2	4/5
	3	yes
9	1	15
	2	21
	3	19/102
10	1	29/47
	2	18/47
	3	21/102 = 7/34