

Conditional Probability 4 Answers

	Math	Social Studies	Total
Ice Cream	20	13	33
Frozen yogurt	15	27	42
Total	35	40	75

Table -1

	Pajamas	Non-Pajamas	Total
Cats	15	13	28
Dogs	22	17	39
Total	37	30	67

Table -2

	Running (R)	Football (F)	Base Ball (B)	Soccer (S)	Total
Mario (M)	25	22	19	16	82
Zelda (Z)	24	16	23	14	77
Total	49	38	42	30	159

Table -3

- Construct a two-way frequency table (**Table 1**) from the data: A group of 75 students was surveyed about their ice cream vs. froyo and math vs. social studies preferences. From that group, 20 preferred ice cream and mathematics, 15 preferred froyo and mathematics, 13 preferred social studies and ice cream, and 27 preferred social studies and froyo.
- Construct a two-way frequency table (**Table 2**) from the data: A group of 67 college students was surveyed about their habits of wearing pajamas or non-pajamas to class and whether they are dog or cat people. From that group, 15 preferred pajamas and cats, 22 preferred pajamas and dogs, 13 preferred non-pajamas and cats, and 17 preferred non-pajamas and dogs.

Use the two-way frequency table (**Table 3**) about preferences for Mario versus Zelda and sport preference to answer questions 3-10. The probabilities of each event are denoted using the subscripts listed in parentheses. Round all answers to the hundredth.
- What is $P(Z)$?
0.48.
- What is $P(M \text{ and } F)$?
0.14.
- What is $P(M \text{ or } Z)$?
1.
- What is $P(F \text{ or } S)$?
0.43.
- What is $P(M|B)$?
0.45.
- What is $P(B|F)$?
0
- Estimate if events Z and B are independent.
They are not independent in this sample.
- Estimate if events Z and R are independent.
They are independent in this sample.

