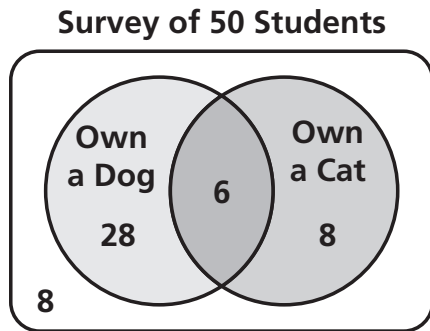


12.3 Start Thinking

In a survey, 50 students were asked: Do you own a dog or a cat? The Venn diagram shows the results. Use the information in the Venn diagram to complete the two-way table. Discuss which format you prefer for displaying the survey results and why.



		Owns a Dog		Total
		Yes	No	
Owns a Cat	Yes			
	No			
Total				

12.3 Warm Up

- Complete the two-way table.

		Age Started Driving		Total
		≤ 16	> 16	
Gender	Male	28		33
	Female		8	22
Total				

12.3 Cumulative Review Warm Up

Graph the function.

1. $y = \left(\frac{1}{2}\right)^{x-3}$

2. $y = \log_2(x + 1)$

3. $y = -\frac{2}{3}(3)^x$

4. $y = 2 - \log_3 x$

5. $y = 2^{x+4} - 5$

6. $y = -2 + \frac{1}{2}\log_4(x - 3)$

12.3

Practice A

In Exercises 1 and 2, complete the two-way table.

1.

		Ran a Half Marathon		Total
		Yes	No	
Role	Student	12		124
	Teacher	7		
Total			263	

2.

		Owns Dog		Total
		Yes	No	
Owns Cat	Yes	24	61	
	No	107		
Total				226

3. In a survey, 112 people feel that the amount of fresh water allowed to empty into the salt water river should be reduced, and 87 people did not feel that the amount of fresh water allowed to empty into the salt water river should be reduced. Of those who feel that the amount of fresh water released should be reduced, 98 people fish the salt water river. Of those that do not feel that the amount of fresh water released should be reduced, 12 people fish the salt water river.
- Organize these results in a two-way table. Then find and interpret the marginal frequencies.
 - Make a two-way table that shows the joint and marginal relative frequencies.
 - Make a two-way table that shows the conditional relative frequencies for each fish category.

12.3 Practice B

In Exercises 1 and 2, use the two-way table to create another two-way table that shows the joint and marginal relative frequencies.

1.

		Surfing Style		Total
		Regular	Advanced	
Gender	Male	86	24	110
	Female	77	18	95
Total		163	42	205

2.

		Fishing License		Total
		Yes	No	
Hunting License	Yes	65	37	102
	No	177	341	518
Total		242	378	620

3. In a survey, 5 people exercise regularly and 21 people do not. Of those who exercise regularly, 1 person felt tired. Of those that did not exercise regularly, 1 person felt tired.
- Organize these results in a two-way table. Then find and interpret the marginal frequencies.
 - Make a two-way table that shows the joint and marginal relative frequencies.
 - Make a two-way table that shows the conditional relative frequencies for each exercise category.

12.3 Enrichment and Extension

Two-Way Tables and Probability

The table shows the joint relative frequencies for how many adults and students attended a concert at the local park on Friday night, and whether or not each bought a program for the concert at the concession stand.

Use the table to complete the exercises.

	Yes	No
Adults	0.42	0.31
Students	0.21	0.06

- Find the marginal relative frequencies for the data. Round your answers to the nearest hundredth, if necessary.

	Yes	No	Total
Adults	0.42	0.31	
Students	0.21	0.06	
Total			

- Based on this data, use a percentage to express how likely it is that a student at a football game next Friday will not buy a program at the concession stand. Round your answer to the nearest whole percent, if necessary.
- Based on this data, use a percentage to express how likely it is that an adult at a football game next Friday will buy a program at the concession stand. Round your answer to the nearest whole percent, if necessary.
- Based on this data, use a percentage to express how likely it is an adult or student at a football game next Friday will buy a program at the concession stand. Round your answer to the nearest whole percent, if necessary.
- If 35 students did not buy a program at the concession stand, then how many adults and students altogether do the data represent?

12.3 Puzzle Time

How Is A Basketball Player Like A Baby?

Write the letter of each answer in the box containing the exercise number.

Complete the two-way table.

	Response		Total
	Yes	No	
Male	15	1.	2.
Female	3.	4.	37
Total	5.	42	84

	Choice		Total
	AWD	4WD	
SUV	6.	10	7.
Van	5	8.	12
Total	16	9.	10.

	Highest Level of Education		Total
	High School	College	
Male	58	11.	113
Female	12.	94	13.
Total	14.	15.	362

Answers

B. 42

B. 249

Y. 10

L. 213

O. 11

T. 32

T. 21

I. 55

E. 149

H. 7

D. 17

H. 47

R. 33

E. 27

B. 155

1	2	3	4		5	6	7	8		9	10	11	12	13	14	15	16
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