Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Two-way tables

_____ 1. A marine biologist measures the monthly growth (in centimeters) of coral that are found both inside and outside the lagoon of an island. The data are organized in the two-way table shown. Is there an association between coral growth and location?

		Coral Growth (centimeters)			
		0.01-0.29	**0.30-0.49**	**0.50-0.69**	**0.7-0.99**
Location	**Inside**	20	25	38	23
	Outside	10	15	19	14

a. There appears to be an association with greater growth occurring outside the lagoon.
b. There does not appear to be an association between growth and location.
c. There appears to be an association with lesser growth occurring inside the lagoon.
d. There appears to be an association with greater growth occurring inside the lagoon.

Use the two-way table to match each description with its value. Use each value, rounded to the nearest percent, only once.

		Age	
		15-21	**35-41**
How You Look Up Spelling Words	**Online**	139	30
	Dictionary	16	73

a. 12%
b. 30%
c. 82%
d. 34%
e. 60%

_____ 2. percent of 35-41 year olds in the survey that look up spelling words online

_____ 3. percent of 15-21 year olds in the survey

_____ 4. given that a person looks up words in a dictionary, the conditional relative frequency that he or she is 35-41 years old

_____ 5. percent of people in the survey that look up words in a dictionary

_____ 6. given that a person is 35-41 years old, the conditional relative frequency that he or she looks up spelling words online

Name: _____ **ID: A**

Find and interpret the marginal frequencies for the two-way table.

7.

		School Play	
		Attend	**Not Attend**
Class	**Junior**	30	48
	Senior	39	38

8.

		Data Plan	
		Limited	**Unlimited**
Text Plan	**Limited**	96	0
	Unlimited	197	14

9. You randomly survey students in your school about whether they prefer communicating by text or email. The results are shown in the tally sheets. Make a two-way table that includes the marginal frequencies.

Prefers Texting	
Student	**Tally**
Male	𝍸 𝍸
Female	𝍸 |||

Prefers Emailing	
Student	**Tally**
Male	𝍸 |
Female	𝍸 𝍸 |||

10. The two-way table shows the results of a survey that asked high school students whether they drive to school. Make a two-way table that shows the joint and marginal relative frequencies.

		Drive to School	
		Yes	**No**
Class	**Sophomore**	25	34
	Junior	143	25

Two-way tables
Answer Section

1. ANS: D PTS: 1 DIF: Level 2 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | recognizing associations in data
   NOT: Example 6
2. ANS: A PTS: 1 DIF: Level 2 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | joint frequency
   NOT: Combined Concept
3. ANS: E PTS: 1 DIF: Level 2 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | marginal relative frequency
   NOT: Combined Concept
4. ANS: C PTS: 1 DIF: Level 2 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | joint relative frequency
   NOT: Combined Concept
5. ANS: D PTS: 1 DIF: Level 2 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | conditional relative frequency
   NOT: Combined Concept
6. ANS: B PTS: 1 DIF: Level 2 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | marginal frequency
   NOT: Combined Concept
7. ANS:
   78 students are juniors, 77 students are seniors, 69 students attend the school play, 86 students do not attend the school play, 155 students were surveyed

   PTS: 1 DIF: Level 1 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | marginal frequency
   NOT: Example 1
8. ANS:
   96 people have limited text plans, 211 people have unlimited text plans, 293 people have limited data plans, 14 people have unlimited data plans, 307 people were surveyed

   PTS: 1 DIF: Level 1 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | marginal frequency
   NOT: Example 1
9. ANS:

		Gender		
		Male	**Female**	**Total**
Communication Preference	**Text**	10	9	19
	Email	6	13	19
	Total	16	22	38

   PTS: 1 DIF: Level 1 REF: Algebra 1 Sec. 11.4
   NAT: HSS-ID.B.5 KEY: application | two-way table | making two-way tables
   NOT: Example 2

10. ANS:

		Drive to School		
		Yes	**No**	**Total**
Class	**Sophomore**	$\frac{25}{227} \approx 0.11$	$\frac{34}{227} \approx 0.15$	0.26
	Junior	$\frac{143}{227} \approx 0.63$	$\frac{25}{227} \approx 0.11$	0.74
	Total	0.74	0.26	1

PTS: 1 DIF: Level 1 REF: Algebra 1 Sec. 11.4
NAT: HSS-ID.B.5
KEY: application | two-way table | joint relative frequency | marginal relative frequency
NOT: Example 3