10.5 Conditional Probability Homework KEY

	Male	Female
Own Cat	20	32
Own Dog	42	28

1. What is P(cats | male)? $\frac{20}{62} = \boxed{\frac{10}{31}}$

2. What is P(own dog | male)? $\frac{42}{62} = \boxed{\frac{21}{31}}$

3. What is the probability that a female will be selected given that she owns a dog? $\frac{28}{70} = \boxed{\frac{2}{5}}$

	Like Math	Like Science
Freshman	120	601
Sophomore	203	799
Junior	402	210
Senior	425	390

4. What is the probability that a freshman respondent will be chosen given that they like math? $\frac{120}{1150} = \boxed{\frac{12}{115}}$

5. What is P(science | sophomore)? $\frac{799}{1002} = \boxed{\frac{799}{1002}}$

6. What is P(sophomore | science)? $\boxed{\frac{799}{2000}}$

7. What is the probability that that a math respondent will be a senior? $\frac{425}{1150} = \boxed{\frac{17}{46}}$

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8. A random survey was taken to gather information about grade level and car ownership status of students at a school. This table shows the results of the survey.

Car Ownership by Grade

	Owns a Car	Does Not Own a Car	Total
Junior	6	10	16
Senior	12	8	20
Total	18	18	36

Estimate the probability that a randomly selected student will be a junior, given that the student owns a car. $\frac{6}{18} = \boxed{\frac{1}{3}}$

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9. Find P(ace | red card). $\frac{2}{26} = \boxed{\frac{1}{13}}$

10. Find P(face card | spades). $\boxed{\frac{3}{13}}$

11. Find P(black card | 3 or 4). $\frac{4}{8} = \boxed{\frac{1}{2}}$

12. Find P(not getting a face card | heart) $\boxed{\frac{10}{13}}$

13. If two dice are rolled, find P(sum of 5 | 3). $\boxed{\frac{1}{6}}$

14. If two dice are rolled, find P(sum that is even | you rolled a 4). $\frac{3}{6} = \boxed{\frac{1}{2}}$

A faculty advisor at Ridge High School surveyed 100 students about their preference for a social event. Of the 100 students surveyed, 50 were tenth graders and 50 were eleventh graders. Of the tenth graders, 30 chose a bowling party and 20 chose a dance. Of the eleventh graders, 20 chose a bowling party and 30 chose a dance.

15. Make a two way frequency table to represent the data.

	Bowl	Dance
10th	30	20
11th	20	30

Let T = 10th graders, E = 11th graders, B = Bowling, and D = Dance

16. Find P(B).

$P(B) = \frac{50}{100} = \boxed{\frac{1}{2}}$

17. Find P(B | T).

$P(B|T) = \frac{30}{50} = \boxed{\frac{3}{5}}$

The table below shows data about 108 pizzas sold in a pizzeria. Each pizza was sold with one topping.

Pizza shape	Pizza topping			
	Pepperoni	Mushroom	Onion	Chicken
Round	20	10	15	15
Square	16	8	18	6

18. What is P(round pizza I mushrooms or onions)?

$\boxed{\frac{25}{51}}$

19. What is P(chicken pizza I square)?

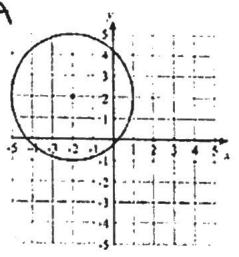
$\frac{6}{48} = \boxed{\frac{1}{8}}$

20. What is P(not getting pepperoni I round)?

$\frac{40}{60} = \boxed{\frac{2}{3}}$

Use the figure to the right to answer each question.

A



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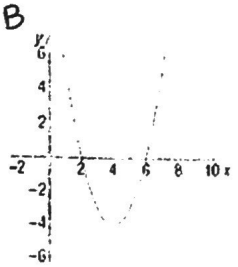


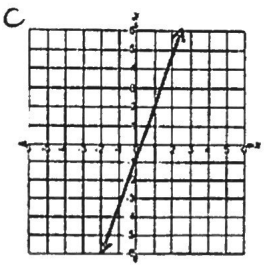
21. What is the probability that the graph has a solution of (1, 2) given at least one variable is squared in the equation representing the graph)?

$\boxed{\frac{2}{3}}$ $\frac{(A \& D)}{(A, B, D)}$

22. What is the probability that the graph is a function given that x is squared in the equation representing the graph)?

$\boxed{\frac{1}{2}}$ $\frac{(B)}{(A \& B)}$

C



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