

Questions on 9.5 Set, 60 or 9.6
Set? Probability Quiz today...

SM2 - Module 9 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

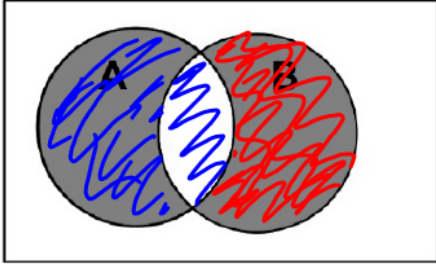
Home Tools SM2 - Module 9 SE... x

15 / 29 125%

6. Sally was assigned to create a Venn diagram to represent $P(A \text{ or } B)$. Sally first writes $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, what does this mean? Explain each part.

We have to add all of circle A & B, but subtract off one intersection because its been counted twice.

7. Sally then creates the following diagram. Sally's Venn diagram is incorrect. Why?



© 2013 MATHEMATICS VISION PROJECT | MVP
In partnership with the Utah State Office of Education
Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported license

8.50 x 11.00 in

10

Notation	2-way Table																
Key: Male = M Female = F Lefty = L Righty = R Sample size = 100 people $P(L) = \frac{10}{100} = 10\%$ $P(M) = \frac{50}{100} = 50\%$ $P(F) = \frac{50}{100} = 50\%$ $P(L F) = \frac{3}{50} = 6\%$ $P(L M) = \frac{7}{50} = 14\%$	<table border="1"> <thead> <tr> <th></th> <th>Lefty</th> <th>Righty</th> <th>Total</th> </tr> </thead> <tbody> <tr> <th>Male</th> <td>7</td> <td>43</td> <td>50</td> </tr> <tr> <th>Female</th> <td>3</td> <td>47</td> <td>50</td> </tr> <tr> <th>Total</th> <td>10</td> <td>90</td> <td>100</td> </tr> </tbody> </table>		Lefty	Righty	Total	Male	7	43	50	Female	3	47	50	Total	10	90	100
	Lefty	Righty	Total														
Male	7	43	50														
Female	3	47	50														
Total	10	90	100														
Venn Diagram	Tree Diagram																
Write three conditional statements regarding this data.																	

SM2 - Module 9 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SM2 - Module 9 SE... x

23 / 29 125%

Determining the independence of events can sometimes be done by becoming familiar with the context in which the events occur and the nature of the events. There are also some ways of determining independence of events based on equivalent probabilities.

- Two events, A and B, are independent if $P(A \text{ and } B) = P(A) \cdot P(B)$
- Additionally, two events, A and B, are independent if $P(A|B) = \frac{P(A \text{ and } B)}{P(B)} = P(A)$

Use these two ways of determining independent events to determine independence in the problems below and answer the questions.

7. $P(A \text{ and } B) = \frac{3}{5}$
 $P(A) = \frac{1}{2}$
 $P(B) = \frac{3}{10}$

Handwritten work:
 $\frac{3}{5} \stackrel{?}{=} \frac{1}{2} \cdot \frac{3}{10}$
 $\frac{3}{5} \neq \frac{3}{20}$
 $\frac{3/2}{3/10} = \frac{?}{1/2}$
 $\frac{10}{1} = 10 \neq \frac{1}{2}$

8. $P(A) = \frac{1}{5}$
 $P(A \text{ and } B) = \frac{1}{6}$
 $P(B) = \frac{1}{3}$

© 2013 MATHEMATICS VISION PROJECT | MVP
 In partnership with the Utah State Office of Education
 Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported license

8.50 x 11.00 in

SM2 - Module 9 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SM2 - Module 9 SE... x

24 / 29 125%

The following data represents the number of men and women passengers aboard the titanic and whether or not they survived.

	Survived	Did not survive	Total
Men	146	659	805
Women	296	106	402
Total	442	765	1207

11. $P(w) =$

12. $P(s) =$

13. $P(s|w) =$

14. $P(w \text{ or } s) = \frac{146 + 296 + 106}{1207} = \frac{548}{1207} = 0.45 = 45\%$

15. $P(w \text{ or } m) =$

16. $P(ns|w) =$

17. $P(m \cap ns) =$

8.50 x 11.00 in

SM2 - Module 9 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SM2 - Module 9 SE... x

24 / 29 125%

The following data represents the number of men and women passengers aboard the titanic and whether or not they survived.

	Survived	Did not survive	Total
Men	146	659	805
Women	296	106	402
Total	442	765	1207

11. $P(w) =$

12. $P(s) =$

13. $P(s|w) =$

14. $P(w \text{ or } s) = \frac{146 + 296 + 106}{1207} = \frac{548}{1207} = 0.45 = 45\%$

15. $P(w \text{ or } m) =$

16. $P(ns|w) = \frac{106}{402} = \underline{\quad} = \underline{\quad} \%$

17. $P(m \cap ns) =$

8.50 x 11.00 in

SM2 - Module 9 SE.pdf - Adobe Acrobat Reader DC

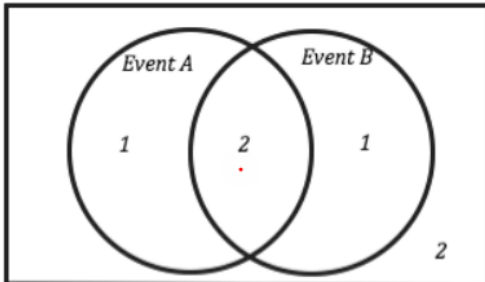
File Edit View Window Help

Home Tools SM2 - Module 9 SE... x

27 / 29 125%

In each of the Venn Diagrams the number of outcomes for each event are given, use the provided information to determine the conditional probabilities or independence. The numbers in the Venn Diagram indicate the number of outcomes in that part of the sample space.

5.



a. How many total outcomes are possible?

b. $P(A) = \frac{1+2}{6} = \frac{3}{6}$ *two-event A & event B*

c. $P(B) = \frac{2+1}{6} = \frac{3}{6}$

d. $P(A \cap B) = \frac{2}{6}$

e. $P(A|B) = \frac{2}{2+1} = \frac{2}{3}$

f. Are events A and B independent events? Why or why not?

$P(A|B) = P(A)$
 $\frac{2}{3} \neq \frac{3}{6}$

$P(B|A) = P(B)$
 $\frac{2}{3} \neq \frac{3}{6}$

Not independent events

© 2013 MATHEMATICS VISION PROJECT | MVP
 In partnership with the Utah State Office of Education
 Licensed under the Creative Commons Attribution NonCommercial ShareAlike 3.0 Unported license

8.50 x 11.00 in

Units 1-2 Review

QuadraticsStandard Form: $ax^2 + bx + c$ Vertex Form: $a(x-h)^2 + k$ Factored Form: $(x-d)(x-e)$ Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

To solve quadratics:
set $y=0$ and solve
for x ; find the
x-intercepts.

$a=1$ $b=2$ $c=-48$
② $x^2 + 2x - 48$
 $(x-6)(x+8)$

Homework

Units 1-2 Review WKS