

Probability Review

Date: _____ Period: _____

Use the following information to answer questions #1-10.

$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$A = \{1, 3, 5, 7, 9\}$

$B = \{2, 4, 6, 8\}$

$C = \{1, 2, 4, 6, 8\}$

$D = \{4\}$

$E = \{3, 5, 7\}$

1. What is A^c ?

2. What is $A \cap B$?

3. What is $A \cap C$?

4. What is $D \cup E$?

5. What is $B \cup C$?

6. What is E^c ?

Using the same information above, fill in the blank with the name of a set that makes the statement true (*there could be more than one right answer).

7. $D \subset$ _____

8. _____ $\subset A$

9. _____ $\subset C$

10. $B \subset$ _____

The following table shows data about women on the RMS Titanic. Use the table to answer the following questions.

Women			
	(L) Lost	(S) Saved	TOTAL
(FC) 1 st Class	4	140	144
(SC) 2 nd Class	13	80	93
(TC) 3 rd Class	89	76	165
(C) Crew	3	20	23
TOTAL	109	316	425

11. $P(S|TC) =$

12. $P(TC) =$

13. $P(S|SC) =$

14. $P(FC|L) =$

15. $P(SC) =$

16. $P(SC|S) =$

17. $P(L) =$

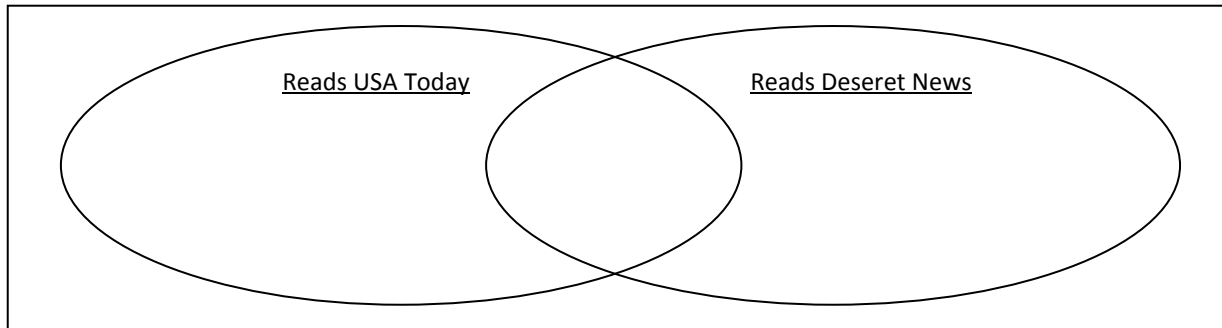
18. $P(L|SC) =$

19. $P(L|C) =$

Use the two-way table to answer the questions that follow.

	Reads USA Today	Does Not read USA Today	TOTAL
Reads Deseret News	5	20	25
Does Not read Deseret News	15	60	75
TOTAL	20	80	100

20. Construct a Venn diagram for the data.



21. $P(\text{reads Deseret News}) =$

22. $P(\text{reads USA Today})^c =$

23. $P(\text{reads USA Today} \cup \text{reads Deseret News}) =$

24. $P(\text{reads USA Today} \cap \text{reads Deseret News})^c =$

25. $P(\text{does not read USA Today} \cap \text{reads Deseret News}) =$

26. $P(\text{does not read USA Today} \cap \text{does not read Deseret News}) =$

27. $P(\text{reads Deseret News} \cup \text{does not read USA Today}) =$

A researcher collected data from 500 students in order to study the relationship between the amount of sleep a student gets and his/her school performance.. There were 75 students who failed the exam, 50 students that passed the exam with less than 6 hours of sleep, and 408 students with more than 6 hours of sleep.

28. Fill in the table with the given information.

	(P) Passed the Exam	(F) Failed the Exam	TOTAL
(L) Less than 6 hours of sleep			
(M) More than 6 hours of sleep			
TOTAL			

29. $P(F) =$

30. $P(F|L) =$

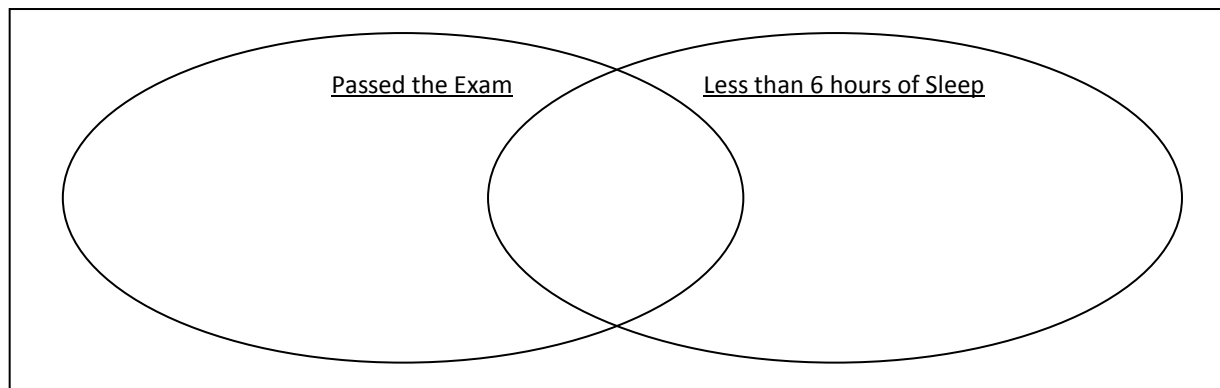
31. $P(L \cap F) =$

32. $P(M|P) =$

33. $P(M)$

34. $P(F \cap M) =$

35. Construct the Venn Diagram below:



You have a standard deck of 52-cards. Find the following:

36. What is the probability of selecting a red queen?

$$P(\text{red} \cap \text{queen}) =$$

37. What is the probability of selecting a card that is a club or a 10?

$$P(\text{club} \cup 10) =$$

38. What is the probability of selecting a face card?

$$P(\text{face card}) =$$

39. What is the probability of selecting a heart or a king?

$$P(\text{heart} \cup \text{king}) =$$

40. What is the probability of selecting a black 2?

$$P(\text{black} \cap 2) =$$

*Bonus: What is the probability of selecting a card that is an ace or a 7 or a king?

$$P(\text{card is an ace} \cup \text{card is a 7} \cup \text{card is a king}) =$$