

Unit 9 REVIEW (Simple Probability)

NAME: _____ HOUR: _____

1-6 Fill in the blank with the following terms. (Intersection, Subset, Independent, Union, Complement, Sample Space)

1. When the occurrence of one event has no effect on the occurrence of another event, the events are _____.
2. The _____ of sets A and B is the set of all elements that are in both A and B .
3. The _____ of set A is the set of all elements in the sample set that are *not* in A .
4. Set C is a _____ of set B if every element of C is also an element of B .
5. A set of all possible outcomes is called a _____.
6. The _____ of sets A and B is the set of all elements that are in A or B .

To answer 7–11, consider the following sets.

- Set A is the set of all nonnegative multiples of 5 less than or equal to 50.
- Set B is the set of all nonnegative multiples of 10 less than or equal to 50.
- Set C is the set of all nonnegative multiples of 15 less than or equal to 50.

7. Represent Sets A , B , & C in set notation.

A: _____

B: _____

C: _____

8. What is $A \cup B$?

A \emptyset

B {30}

C {10, 15}

D {10, 15, 20, 30, 40, 45, 50}

9. What is $A \cap B$?

10. a) Is $A \subset B$? Circle one. YES NO

11. What is A^c ?

b) Is $B \subset C$? Circle one. YES NO

Use flipping three coins for the following questions. Let T be Tails and H be Heads.

12. What is the sample space for flipping three coins?

13. What is $P(HHH)$?

14. What is $P(\text{to get two } T)$?

Use the following table to find the following probabilities, if one person is selected randomly.

What flavor of ice cream would you pick?			
	Chocolate	Vanilla	Neither
Children	40	22	15
Teens	12	16	45
Adults	55	54	10
Total	107	92	70

15. $P(\text{Chocolate})$ 16. $P(\text{Teen})$ 17. $P(\text{Vanilla} \cap \text{Adult})$
18. $P(\text{Neither} \cap \text{Teen})$ 19. $P(\text{Child} \cup \text{Vanilla})$ 20. $P(\text{Teen} \cup \text{Chocolate})$
21. Are the events Adult and Vanilla Independent?

Use the following table to find the following probabilities, if one person is selected randomly.

	Spanish	French	German	Total
Boys	10	2	8	20
Girls	15	12	3	30
Total	25	14	11	50

22. $P(\text{Spanish}|\text{Boy})$ 23. $P(\text{German}|\text{Girl})$
24. $P(\text{Girl}|\text{French})$ 25. Are the events Boy and German independent?

For questions 19-20, decide whether the given method of choosing a winner in the contest is fair. Explain your answer.

26. The names of all people entered in the contest are written on pieces of paper and put in a jar. Without looking, one of the names is picked from the jar.

27. The person organizing the contest decides to choose a person with a last name starting with "S." He then looks at the names of the people who entered the contest, and chooses a person whose last name starts with "S."
