13.2 Complements and Unions of Events
M. Goodroe - Quantitative Skills and Reasoning

Key Terms:
    Complement
    Union
    Mutually Exclusive

Name:_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use the complement formula to answer the question.

1) If two fair dice are rolled, what is the probability that a total showing is more than three?

2) The table gives information about the high temperature in Bristol, Wisconsin for the 365 days in a given year.

High Temp in °F	Number of Days During the Year
–30 to –11	2
–10 to 9	30
10 to 29	55
30 to 49	69
50 to 69	79
70 to 89	108
90 to 109	22

If we select one day at random from the 365 days in that year, what is the probability that the high temperature that day was less than 70° F? Round your answer to 2 decimal places.

Solve the problem.

3) If two fair dice are rolled, what is the probability that a total showing is either even or less than five?

4) If a single card is drawn from a standard 52-card deck, what is the probability that it is neither a Jack nor a club?

5) The table gives information, broken down by year in college, about the number of credit hours for which students are enrolled.

	14+ hours	11–13 hours	10 or less hours	TOTALS
Freshmen	237	464	386	1087
Sophomores	326	360	423	1109
Juniors	57	325	151	633
Seniors	110	276	109	495
TOTALS	830	1425	1069	3324

What is the probability that a student selected at random is a sophomore or is taking between 11 and 13 hours? R your answer to 2 decimal places.

Find the requested probability.

6) If $P(A \cup B) = 0.64$, $P(A) = 0.31$, and $P(B) = 0.49$, find $P(A \cap B)$.

7) If $P(A \cup B) = 0.64$, $P(A) = 0.39$, and $P(A \cap B) = 0.17$, find $P(B)$.

Solve the problem.

8) Bob earns both a salary and a commission as a salesman at an auto dealership. The following table lists his estimates of the probabilities of earning various commissions for the next month:

Commission	Probability that this will happen
Less than $500	0.12
$500 – $999	0.25
$1000 – $1499	0.29
$1500 – $1999	0.17
$2000 – $2499	0.12
$2500 – $2999	0.03
$3000 – $3499	0.02

What is the probability that he will earn at least $500 in commissions?