

Course Review for MATH 1010

MULTIPLE CHOICE.

Choose the one alternative that best completes the statement or answers the question.

In Questions 1 and 2, decide whether the argument is an example of inductive or deductive reasoning.

Question 1.

His last four at bats were strikeouts. Therefore, the next will be a strikeout.

A) Inductive

B) Deductive

Question 2.

Fresh fruit costs more in winter. This is January. Therefore, these fresh strawberries will cost more.

A) Deductive

B) Inductive

In Questions 3 and 4, determine the most probable next term in the sequence.

Question 3.

486, 162, 54, 18, 6

A) 1

B) 3

C) 2

D) $\frac{2}{3}$

Question 4.

$\frac{3}{2}, \frac{5}{4}, \frac{7}{6}, \frac{9}{8}, \frac{11}{10}$

A) $\frac{12}{11}$

B) $\frac{13}{12}$

C) $\frac{13}{11}$

D) $\frac{12}{13}$

Use the method of Gauss to find the sum.

Question 5.

$$1 + 2 + 3 + \dots + 375$$

- A) 141,376
- B) 70,500
- C) 35,156.25
- D) 70,312.5

Find a pattern and use it to solve the problem.

Question 6.

Find the next term: 1, 1, 2, 3, 5, 8, 13

- A) 15
- B) 18
- C) 16
- D) 21

Use the method of successive differences to determine the next term in the sequence.

Question 7.

20, 31, 45, 62, 82, ...

- A) 105
- B) 102
- C) 107
- D) 108

Use logic to solve the problem.

Question 8.

In India, water lilies grow extremely fast. In one pond, a lily grew so fast that each day it doubled the area it covered. In 28 days it covered the pond. How long would it take 2 such lilies to cover the pond?

- A) 14
- B) 7
- C) 27
- D) 28

In Questions 9 and 10, use problem solving strategies to solve the problem.

Question 9.

The number of dogs and chickens on a farm add up to 12. The number of legs between them is 28. How many dogs and how many chickens are on the farm if there are at least twice as many chickens as dogs?

- A) 2 dogs, 10 chickens
- B) 3 dogs, 9 chickens
- C) 6 dogs, 6 chickens
- D) 4 dogs, 8 chickens

Solve the problem.

Question 10.

When 15 gallons of gasoline are put into a car's tank, the indicator goes from $\frac{1}{8}$ of a tank to $\frac{3}{4}$. What is the total capacity of the gasoline tank?

- A) 30 gallons
- B) 24 gallons
- C) 18 gallons
- D) 36 gallons

List the elements in the set.

Question 11

$\{x \mid x \text{ is an integer between } -2 \text{ and } 2\}$

- A) $\{-2, -1, 0, 1\}$
- B) $\{-2, -1, 0, 1, 2\}$
- C) $\{-1, 0, 1, 2\}$
- D) $\{-1, 0, 1\}$

Find $n(A)$ for the set.

Question 12.

$A = \{3, 3, 4, 4, \dots, 7, 7\}$

- A) $n(A) = 3$
- B) $n(A) = 10$
- C) $n(A) = 6$
- D) $n(A) = 5$

Write the set in set-builder notation.

Question 13.

$\{2, 4, 8, 16, 32, \dots\}$

- A) $\{x \mid x \text{ is a positive multiple of } 2\}$
- B) $\{x \mid x \text{ is an integer power of } 2\}$
- C) $\{x \mid x \text{ is a positive integer power of } 2\}$
- D) $\{x \mid x \text{ is a positive multiple of } 4\}$

For Questions 14 and 15, determine whether the statement is true or false.

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

$B = \{5, 6, 7, 8\}$

$C = \{5, 8\}$

$D = \{2, 5, 8\}$

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

Question 14.

$\emptyset \subseteq A$

- A) True
- B) False

Question 15.

$D \subseteq B$

- A) True
- B) False

Find the number of subsets of the set.

Question 16.

$\{\text{Math, English, history, science, art}\}$

- A) 28
- B) 32
- C) 16
- D) 24

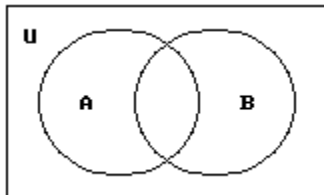
For the given sets, construct a Venn diagram and place the elements in the proper region.

Question 17.

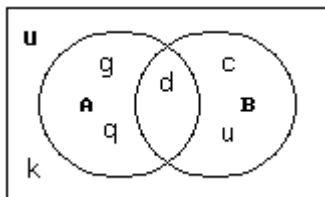
Let $U = \{c, d, g, h, k, u, q\}$

$A = \{d, h, g, q\}$

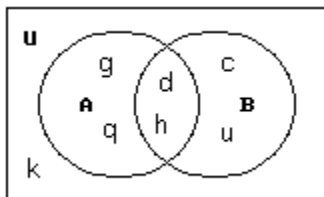
$B = \{c, d, h, u\}$



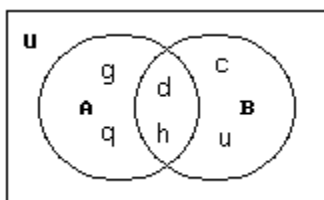
A)



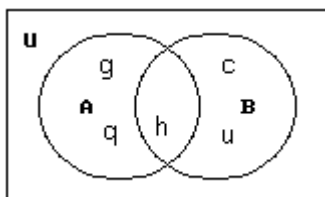
B)



C)



D)



For the given sets, construct a Venn diagram and place the elements in the proper region.

Question 18.

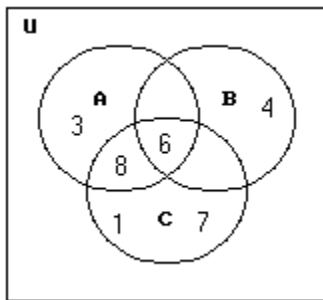
Let $U = \{1, 2, 3, 4, 5, 6, 7, 8\}$

$A = \{3, 6, 8\}$

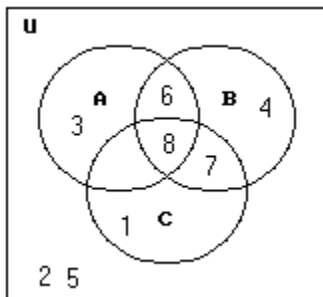
$B = \{4, 6\}$

$C = \{1, 6, 7, 8\}$

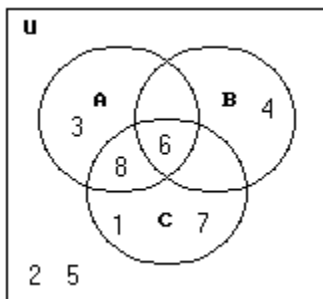
A)



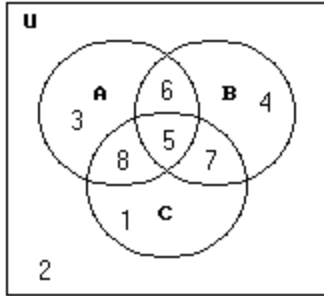
B)



C)



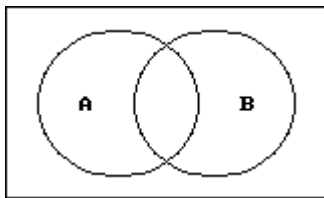
D)



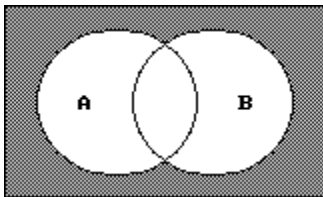
Shade the regions representing the set.

Question 19.

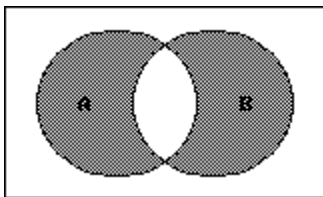
$$A' \cap B'$$



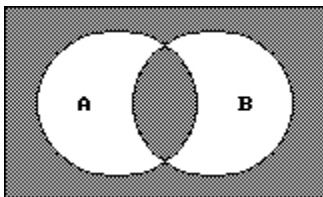
A)



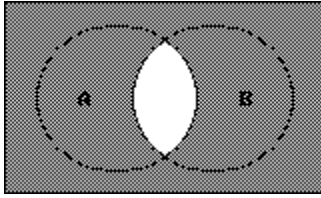
B)



C)

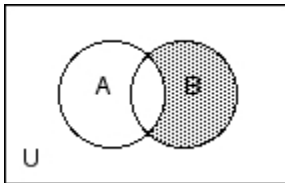


D)



Write a description of the shaded region using the symbols A , B , C , u , n , $-$, and $'$ as needed.

Question 20.



A) $B - A'$

B) $A - B$

C) $A \cap B'$

D) $B \cap A'$

For Questions 21 and 22, write a negation for the statement.

Question 21.

Some athletes are musicians.

A) Some athletes are not musicians.

B) Not all athletes are musicians.

C) No athlete is a musician.

D) All athletes are musicians.

Question 22.

Everyone is asleep.

A) Nobody is asleep.

B) Everyone is awake.

C) Nobody is awake.

D) Not everyone is asleep.

For Questions 23, 24, and 25, list the elements in the set.

Let $U = \{q, r, s, t, u, v, w, x, y, z\}$

$$A = \{q, s, u, w, y\}$$

$$B = \{q, s, y, z\}$$

$$C = \{v, w, x, y, z\}$$

Question 23.

$$B \cap C$$

- A) $\{y, z\}$
- B) $\{w, y, z\}$
- C) $\{y\}$
- D) $\{q, s, v, w, x, y, z\}$

Question 24.

$$C' \cup A'$$

- A) $\{q, s, u, v, w, x, y, z\}$
- B) $\{w, y\}$
- C) $\{r, t\}$
- D) $\{q, r, s, t, u, v, x, z\}$

Question 25.

$$A \cap (B \cup C)$$

- A) $\{q, s, u, w, y, z\}$
- B) $\{q, s, w, y\}$
- C) $\{q, r, w, y, z\}$
- D) $\{q, y, z\}$

Let $U = \{1, 2, 4, 5, a, b, c, d, e\}$. Find the complement of the set.

Question 26.

$$S = \{1, 5, e, d, a\}$$

- A) $\{1, 2, 4, b, c\}$
- B) $\{2, 3, 4, b, c\}$
- C) $\{2, 3, 4, a, b, c\}$
- D) $\{2, 4, b, c\}$

Convert the symbolic compound statement into words.

Question 27

p represents the statement "It's raining in Chicago." q represents the statement "It's windy in Boston."

Translate the following compound statement into words: $p \vee q$

- A) It's not the case that it's raining in Chicago and windy in Boston.
- B) It's raining in Chicago or it's windy in Boston.
- C) If it's raining in Chicago, it's not windy in Boston.
- D) It's raining in Chicago and it's windy in Boston.

Let p represent the statement, "Jim plays football", and let q represent the statement "Michael plays basketball". Convert the compound statement into symbols.

Question 28.

Jim does not play football or Michael does not play basketball.

- A) $\sim p \wedge \sim q$
- B) $\sim(p \vee q)$
- C) $\sim p \vee \sim q$
- D) $\sim p \wedge q$

For Questions 29 and 30, let p represent a true statement and let q represent a false statement. Find the truth value of the given compound statement.

Question 29.

$$p \wedge q$$

- A) True
- B) False

Question 30.

$$\sim(p \vee \sim q)$$

A) False

B) True

For Questions 31 and 32, construct a truth table for the statement.

Question 31.

$$\sim r \wedge \sim p$$

A)

r	p	$(\sim r \wedge \sim p)$
T	T	F
T	F	F
F	T	F
F	F	F

B)

r	p	$(\sim r \wedge \sim p)$
T	T	F
T	F	F
F	T	F
F	F	T

C)

r	p	$(\sim r \wedge \sim p)$
T	T	F
T	F	T
F	T	T
F	F	T

D)

r	p	$(\sim r \wedge \sim p)$
T	T	T
T	F	F
F	T	F
F	F	T

Question 32.

$$\sim s \vee (\sim p \vee s)$$

A)

s	p	$\sim s \vee (\sim p \vee s)$
T	T	T
T	F	F
F	T	T
F	F	T

B)

s	p	$\sim s \vee (\sim p \vee s)$
T	T	T
T	F	T
F	T	T
F	F	T

C)

s	p	$\sim s \vee (\sim p \vee s)$
T	T	F
T	F	T
F	T	T
F	F	T

D)

s	p	$\sim s \vee (\sim p \vee s)$
T	T	F
T	F	F
F	T	T
F	F	T

For Questions 33 and 34, rewrite the statement using the if...then connective. Rearrange the wording or words as necessary.

Question 33.

All chocolate is good.

- A) If it isn't chocolate, then it isn't good.
- B) Chocolate is good.
- C) If it's good, then it's got to be chocolate.
- D) If it's chocolate, then it's good.

Question 34.

I'll leave when he arrives.

- A) If he arrives, then I'll leave.
- B) I'll leave when he arrives.
- C) If I leave, then he will leave.
- D) If I will leave, then he'll arrive.

Construct a truth table for the statement.

Question 35.

$$p \rightarrow \sim q$$

A)

p	q	$p \rightarrow \sim q$
T	T	T
T	F	T
F	T	F
F	F	F

B)

p	q	$p \rightarrow \sim q$
T	T	F
T	F	T
F	T	T
F	F	T

C)

p	q	$p \rightarrow \sim q$
T	T	F
T	F	F
F	T	T
F	F	T

D)

p	q	$p \rightarrow \sim q$
T	T	T
T	F	F
F	T	T
F	F	T

Write the compound statement in symbols.

Let r = "The food is good."

p = "I eat too much."

q = "I'll exercise."

Question 36.

The food is good and if I eat too much, then I'll exercise.

A) $(r \vee p) \rightarrow q$

B) $(r \wedge p) \rightarrow q$

C) $(r \rightarrow p) \vee q$

D) $r \wedge (p \rightarrow q)$

For Questions 37 and 38, write the negation of the conditional. Use the fact that the negation of $p \rightarrow q$ is $p \wedge \sim q$.

Question 37.

If you give your hat to the doorman, he will give you a dirty look.

- A) You do not give your hat to the doorman and he will give you a dirty look.
- B) You give your hat to the doorman and he will not give you a dirty look.
- C) If you give your hat to the doorman he will not give you a dirty look.
- D) You do not give your hat to the doorman and he will not give you a dirty look.

Question 38.

If you can't take the heat, stay out of the kitchen.

- A) You can take the heat but stay out of the kitchen.
- B) You can take the heat and stay out of the kitchen.
- C) You can't take the heat and do not stay out of the kitchen.
- D) You can take the heat and do not stay out of the kitchen.

For Questions 39, 40, and 41, write the converse, inverse, or contrapositive of the statement as requested.

Question 39.

If I were young, I would be happy. Converse

- A) If I were not happy, I would not be young.
- B) If I were not young, I would not be happy.
- C) If I were young, I would not be happy.
- D) If I were happy, I would be young.

Question 40.

All cats catch birds. Inverse

- A) If it's not a cat, it doesn't catch birds.
- B) If it catches birds, it's a cat.
- C) If it doesn't catch birds, it's not a cat.
- D) Not all cats catch birds.

Question 41.

Love is blind. Contrapositive

- A) If it is not blind, then it is not love.

- B) If it is not love, it is not blind.
- C) If it is blind then it is not love.
- D) If it is blind then it is love.

Using the 36 possibilities found in the product table for rolling two dice, list and count the outcomes for which the sum (for both dice) is the following.

Question 42.

Equal to 8

- A) (2,6), (3,5); 2
- B) (2,6), (3,5), (4,4), (5,3), (6,2); 5
- C) (2,6), (3,5), (4,4), (4,4), (5,3), (6,2); 6
- D) (2,6), (3,5), (4,4); 3

Given a group of students: $G = \{\text{Allen, Brenda, Chad, Dorothy, Eric}\}$ or $G = \{A, B, C, D, E\}$, list and count the different ways of choosing the following officers or representatives for student congress. Assume that no one can hold more than one office.

Question 43.

Four representatives

- A) ABCD, ABCE, ACDE, ADEB, BCDE; 5
- B) ABCD, ABCE, ACDE, ADEB; 4
- C) ABCD, ABCE, ACDE, ADEB, BCEA, BDEA, CABD, CEBD, DACE; 10
- D) ABCE; 1

For Questions 44 – 52, solve the problem.

Question 44.

At a lumber company, shelves are sold in 3 types of wood, 3 different widths and 6 different lengths. How many types of shelves could be ordered?

- A) 12
- B) 54
- C) 27
- D) 36

Question 45.

A sports shop sold tennis rackets in 3 different weights, 3 types of string, and 4 grip sizes. How many different rackets could be sold?

- A) 36 rackets
- B) 27 rackets

C) 10 rackets

D) 24 rackets

Question 46.

A musician plans to perform 5 selections for a concert. If he can choose from 7 different selections, how many ways can he arrange his program?

A) 35

B) 2520

C) 16,807

D) 21

Question 47.

How many different 4-letter radio-station call letters can be made if the first letter must be K or W, repeats are allowed, but the call letters cannot end in an O?

A) 456,976

B) 16,900

C) 33,800

D) 35,152

Question 48.

How many ways can a president, vice-president, and secretary be chosen from a club with 12 members?

A) 220

B) 6

C) 36

D) 1320

Question 49.

There are 5 women running in a race. How many different ways could first, second, and third place finishers occur?

A) 125

B) 10

C) 15

D) 60

Question 50.

There are 13 members on a board of directors. If they must form a subcommittee of 5 members, how many different subcommittees are possible?

A) 120

B) 1287

C) 371,293

D) 154,440

Question 51.

A pool of possible jurors consists of 15 men and 10 women. How many different juries consisting of 5 men and 7 women are possible?

A) 360,360

B) 5,200,300

C) 1,352,078

D) 3123

Question 52.

A poker hand consists of 5 cards dealt from an ordinary deck of 52 playing cards. How many different hands are there consisting of four hearts and one spade?

A) 9295

B) 728

C) 715

D) 13

If two fair dice, one red and one white, are rolled, in how many ways can the result be obtained?

Question 53.

The product of the numbers on the two dice is a perfect square.

A) 7 ways

B) 6 ways

C) 5 ways

D) 8 ways

In Questions 54, 55, and 56, find the probability.

Question 54.

A bag contains 7 red marbles, 2 blue marbles, and 3 green marbles. What is the probability that a randomly selected marble is blue?

A) $\frac{1}{4}$

B) $\frac{2}{9}$

C) $\frac{1}{6}$

D) $\frac{7}{12}$

Question 55.

Two fair 6-sided dice are rolled. What is the probability the sum of the two numbers on the dice is 4?

A) 3

B) $\frac{11}{12}$

C) $\frac{2}{3}$

D) $\frac{1}{12}$

Question 56.

Three fair coins are tossed. Find the probability of getting exactly two tails.

A) $\frac{5}{8}$

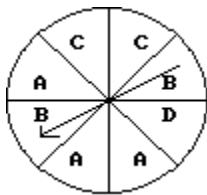
B) $\frac{1}{2}$

C) $\frac{1}{4}$

D) $\frac{3}{8}$

For Questions 57 – 60, solve the problem.

Question 57.



What are the odds in favor of spinning an A on this spinner?

A) 3:5

- B) 6:2
- C) 2:6
- D) 4:2

Question 58.

1 **2** **3** **4** **5**

What are the odds in favor of drawing an even number from these cards?

- A) 3:2
- B) 5:2
- C) 2:3
- D) 2:5

Question 59.

The table shows the number of college students who prefer a given pizza topping.

toppings	freshman	sophomore	junior	senior
cheese	16	16	21	28
meat	24	28	16	16
veggie	16	16	24	28

Find the empirical probability that a randomly selected student prefers cheese toppings.

- A) 0.325
- B) 0.112
- C) 0.346
- D) 0.337

Question 60.

Mr. Larsen's third grade class has 22 students, 12 girls and 10 boys. Two students must be selected at random to be in the fall play. What is the probability that no boys will be chosen? Order is not important.

- A) $\frac{1}{6}$
- B) $\frac{2}{7}$
- C) $\frac{5}{6}$
- D) $\frac{6}{11}$

Find the probability.

Question 61.

A fair die is rolled. What is the probability of rolling a 3 or a 6?

A) 2

B) $\frac{1}{3}$

C) $\frac{1}{6}$

D) $\frac{1}{36}$

In Questions 62 – 65, find the indicated probability.

Question 62.

The age distribution of students at a community college is given below.

<u>Age (years)</u>	<u>Number of students (f)</u>
Under 21	400
21-25	403
26-30	219
31-35	56
Over 35	29
	<hr/>
	1107

A student from the community college is selected at random. Find the probability that the student is between 26 and 35 inclusive. Round approximations to three decimal places.

A) 0.051

B) 0.198

C) 275

D) 0.248

Question 63.

The distribution of B.A. degrees conferred by a local college is listed below, by major.

<u>Major</u>	<u>Frequency</u>
English	2073
Mathematics	2164
Chemistry	318
Physics	856
Liberal Arts	1358
Business	1676
Engineering	<u>868</u>

What is the probability that a randomly selected degree is in English or Mathematics?

- A) 0.424
- B) 0.455
- C) 0.010
- D) 0.517

Question 64.

A card is drawn at random from a standard 52-card deck. Find the probability that the card is neither an ace nor a heart.

- A) $\frac{9}{13}$
- B) $\frac{21}{26}$
- C) $\frac{35}{52}$
- D) $\frac{4}{13}$

Question 65.

A bag contains 5 red marbles, 4 blue marbles, and 1 green marble. If a marble is selected at random, what is the probability that it is not blue?

- A) $\frac{5}{3}$
- B) $\frac{2}{5}$
- C) $\frac{3}{5}$
- D) 6

Determine whether the events are independent.

Question 66.

Two cards are selected at random from a standard deck of 52 cards without replacement. Are the events "ace on the first draw" and "ace on the second draw" independent?

- A) No

B) Yes

In Questions 67, 68, and 69, find the indicated probability.

Question 67.

The table below shows the soft drink preferences of people in three age groups.

	cola	root beer	lemon-lime
under 21 years of age	40	25	20
between 21 and 40	35	20	30
over 40 years of age	20	30	35

If one of the 255 subjects is randomly selected, find the probability that the person is over 40 and drinks cola.

A) $\frac{4}{51}$

B) $\frac{4}{17}$

C) $\frac{4}{19}$

D) None of the above is correct.

Question 68.

The table below shows the soft drinks preferences of people in three age groups.

	cola	root beer	lemon-lime
under 21 years of age	40	25	20
between 21 and 40	35	20	30
over 40 years of age	20	30	35

If one of the 255 subjects is randomly selected, find the probability that the person is over 40 years of age given that they drink root beer.

A) $\frac{6}{17}$

B) $\frac{5}{17}$

C) $\frac{2}{5}$

D) None of the above is correct.

Question 69.

The table below shows the soft drinks preferences of people in three age groups.

	cola	root beer	lemon-lime
under 21 years of age	40	25	20
between 21 and 40	35	20	30
over 40 years of age	20	30	35

If one of the 255 subjects is randomly selected, find the probability that the person drinks root beer given that they are over 40.

A) $\frac{2}{5}$

B) $\frac{6}{17}$

C) $\frac{2}{17}$

D) None of the above is correct.

In Questions 70 and 71, find the probability.

Question 70.

Find the probability of correctly answering the first 4 questions on a multiple choice test if random guesses are made and each question has 3 possible answers.

A) $\frac{3}{4}$

B) $\frac{1}{64}$

C) $\frac{1}{81}$

D) $\frac{4}{3}$

Question 71.

In one town, 70% of adults have health insurance. What is the probability that 8 adults selected at random from the town all have health insurance?

- A) 0.114
- B) 0.7
- C) 0.058
- D) 5.6

In Questions 72 and 73, use the general multiplication rule to find the indicated probability.

Question 72.

You are dealt two cards successively (without replacement) from a shuffled deck of 52 playing cards. Find the probability that both cards are black.

- A) $\frac{25}{102}$
- B) $\frac{1}{2652}$
- C) $\frac{25}{51}$
- D) $\frac{13}{51}$

Question 73.

Two marbles are drawn without replacement from a box with 3 white, 2 green, 2 red, and 1 blue marble. Find the probability that both marbles are white.

- A) $\frac{3}{28}$
- B) $\frac{3}{8}$
- C) $\frac{9}{56}$
- D) $\frac{3}{32}$

Find the conditional probability.

Question 74.

If three cards are drawn at random without replacement from a standard deck, find the probability that the third card is a face card, given that the first card was a queen and the second card was a 5.

A) $\frac{11}{50}$

B) $\frac{3}{13}$

C) $\frac{6}{25}$

D) $\frac{1}{5}$

Construct a stem and leaf display for given data.

Question 75.

Here are the final scores for the last 16 games played by the local basketball team.

45 54 53 65

67 75 57 59

87 86 79 74

67 75 87 65

A)

Stem	Leaf
4	5
5	3 4 7 9
6	5 5 7 7
7	4 5 5 9
8	6 7 7

B)

Stem	Leaf
4	45
5	53 54 57 59
6	65 67
7	74 75 79
8	86 87

C)

Stem	Leaf
4	5
5	3 4 7 9
6	5 7
7	4 5 9
8	6 7

D)

Stem	Leaf
4	45
5	53 54 57 59
6	65 65 67 67
7	74 75 75 79
8	86 86 87

Construct the specified histogram.

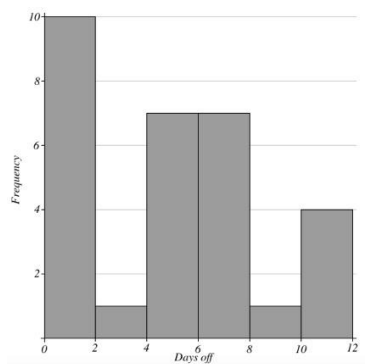
Question 76.

The frequency table below shows the number of days off in a given year for 30 police detectives.

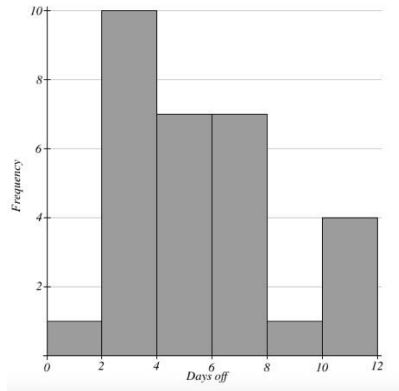
Days off	Frequency
0 – 1	10
2 – 3	1
4 – 5	7
6 – 7	7
8 – 9	1
10 – 11	4

Choose the histogram corresponding to this frequency table.

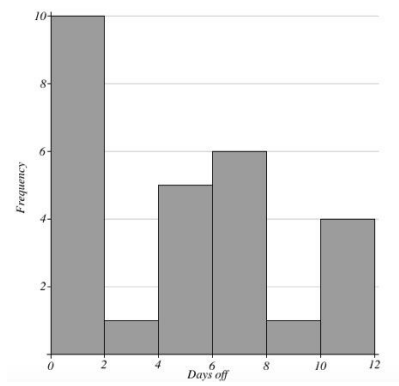
A)



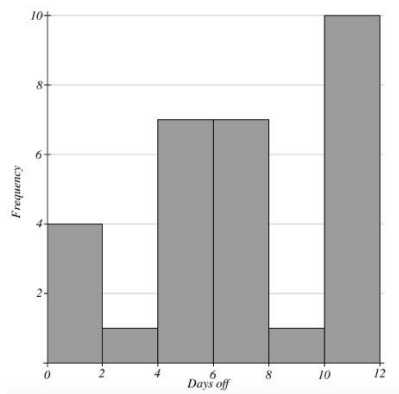
B)



C)



D)



Find the mean of the set of data.

Question 77.

1.202, 12.337, 4.185, 7.194, 5.294

Round your answer to three decimal places.

- A) 7.553
- B) 6.042
- C) 1.299
- D) 5.800

Find the median.

Question 78.

6, 2, 26, 14, 49, 42, 31

- A) 26
- B) 31
- C) 24
- D) 14

Find the mode or modes.

Question 79.

79, 42, 32, 42, 29, 79

- A) 42
- B) 79, 42
- C) 79
- D) 50.5

Find the mean for the given frequency distribution.

Question 80.

Find the approximate mean for the grouped frequency distribution. Use the class midpoint to represent each class. Round your answer to two decimal places.

Score	Frequency
60 - 69	3
70 - 79	12
80 - 89	7
90 - 99	2

- A) 74.50
- B) 78.12
- C) 79.50
- D) 77.83

Find the median for the given frequency distribution.

Question 81.

Value	Frequency
-------	-----------

20	4
30	6
40	5
50	3
80	1

- A) 40
- B) 44
- C) 35
- D) 30

In Questions 82 and 83, solve the problem. Assume that simple interest is being calculated in each case. Round the answer to the nearest cent unless otherwise indicated.

Question 82.

Allan borrowed \$3900 from his father to buy a car. He repaid him after 9 months with interest of 7% per year. Find the total amount he repaid.

- A) \$4082.00
- B) \$204.75
- C) \$4173.00
- D) \$4104.75

Question 83.

Martin takes out a simple interest loan at 4 %. After 10 months the amount of interest on the loan is \$80.93. What was the amount of the loan? Round to the nearest dollar.

- A) \$2768
- B) \$2389
- C) \$2428
- D) \$24

Find the compound interest earned by the deposit. Round to the nearest cent.

Question 84.

\$7824 at 4% compounded continuously for 4 years

- A) \$3389.90
- B) \$2122.03

C) \$1357.55

D) \$9181.55

Use the compound interest formula to compute the future value of the investment.

Question 85.

\$5500 at 8% compounded monthly for 7 years

A) \$5761.86

B) \$196,473.48

C) \$9610.82

D) \$7688.66

In Questions 86 and 87, solve the problem.

Question 86.

An item is purchased for \$2500 with a down payment of \$500. There is a finance charge of \$150. Find the monthly payment if 20 payments are made.

A) \$132.50

B) \$107.50

C) \$100.00

D) None of the above is correct.

Question 87.

The cash price of a fitness system is \$659.99. The customer paid \$115 as a down payment. The remainder will be paid in 36 monthly installments of \$19.16 each. Find the amount of the finance charge.

A) \$689.76

B) \$141.17

C) \$144.77

D) \$29.77

Solve the problem. If necessary, use the table of monthly payments below. Round your answer to the nearest cent.

Monthly Payments to Repay Principal and Interest on a \$1000 Mortgage

Terms of Mortgage (Years)

Annual Rate (r)	5	10	15	20	25	30
8.0%	\$20.27639	\$12.13276	\$9.55652	\$8.36440	\$7.71816	\$7.33765
8.5%	20.51653	12.39857	9.84740	8.67823	8.05227	7.68913
9.0%	20.75836	12.66758	10.14267	8.99726	8.39196	8.04623
9.5%	21.00186	12.93976	10.44225	9.32131	8.73697	8.40854
10.0%	21.24704	13.21507	10.74605	9.65022	9.08701	8.77572
10.5%	21.49390	13.49350	11.05399	9.98380	9.44182	9.14739
11.0%	21.74242	13.77500	11.36597	10.32188	9.80113	9.52323
11.5%	21.99261	14.05954	11.68190	10.66430	10.16469	9.90291
12.0%	22.24445	14.34709	12.00168	11.01086	10.53224	10.28613

Question 88.

Find the total monthly payment, including taxes and insurance, on the following fixed-rate mortgage.

Amount of loan: \$105,250

Interest rate: 10%

Term of loan: 25 years

Annual taxes: \$3001

Annual insurance: \$466

- A) \$1245.32
- B) \$1263.53
- C) \$1294.05
- D) \$956.41

Use the following survey to answer the question.

Question 89. A survey of a group of 138 students was taken at Murfreesboro High School. The survey showed the following:

30 students only play an instrument;

42 students only play a sport;

15 students only act in theater;

8 students play an instrument and a sport, but do not act in theater;

9 students play a sport and act in theater, but do not play an instrument;

7 students act in theater and play an instrument, but do not play a sport;

17 students do none of the three activities.

How many students participate in all three activities?

A) 19

B) 10

C) 27

D) 64