Take Assessment: Section I Exam

Name Section I Exam

Instructions These questions come from the Unit Discussion Assignments found in each course unit. To help prepare your answers, you should use your text and other references and readings which pertain to the topic in question. You may enter and save your answers for a portion of this exam by using the "Save" button. Once all questions have been answered, click the "Submit" button. The "Save" and "Submit" buttons are located at the bottom of the exam. **Complete the problem below and show your work.This exam is not to be submitted by e-mail but only as an online exam by clicking the submit button.**

NOTE: In order to respond you will need to upload your saved document into Blackboard by clicking on the "browse" button in each question.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **10 points** Save

Calculate the value of the function at the designated input and explain the result. C(x) = 45.50x, where C(x)is the cost of buying x radios.

a. Find the cost of buying 5 radios.
b. Find the cost of buying 8 radios.

Attach local file Browse...

Question 2 **10 points** Save

Given that a line passes through two points (4, 5) and (6, 9), answer the following questions: What is the slope of the line?
What is the equation of the line in slope intercept form?
What is the equation of the line in point slope form?
What is the equation of the line in standard form?

Attach local file Browse...

Question 3 **10 points** Save

In 2006, Jenny began selling magazines. The company sold Jenny a beginning packet for $250.00. Jenny's cost for each magazine is 10% of the sales price.

1. Find the linear model for Jenny's cost as a function of the dollar volume of magazines sold.
2. Find the linear model of Jenny's revenue as a function of the dollar volume of magazines sold.
3. Find the linear model for Jenny's profit as a function of the dollar volume of magazines sold.
4. How many dollars of magazines must Jenny sell before she begins to make a profit?

Attach local file Browse...

Question 4 **10 points** Save

Solve the following systems of equations.

a. $\begin{cases} 3x - 7y = 10 \\ 2x + y = 4 \end{cases}$

b. $\begin{cases} 2x + 2y = 7 \\ 3x - 3y = 4 \end{cases}$

Attach local file Browse...

Question 5 **10 points** Save

Rewrite the following system of equations as an augmented matrix. Then, put the matrix in reduced row echelon form to find the solution to the system of equations.

$$\begin{cases} x - y = 3 \\ 6x + 7y = 44 \\ 6x - 7y = 16 \end{cases}$$

Attach local file Browse...

Question 6 **10 points** Save

Determine if the following matrices are in reduced row echelon form. If it is not reduced, specify which criteria it fails to meet.

a. $\left[\begin{array}{ccc|c} 1 & 0 & 0 & 3 \\ 0 & 0 & 1 & 2 \\ 0 & 0 & 0 & 1 \end{array}\right]$

b. $\left[\begin{array}{ccc|c} 1 & 0 & 0 & 3 \\ 0 & 1 & 2 & 5 \\ 0 & 0 & 1 & 6 \end{array}\right]$

Attach local file Browse...

Question 7 **10 points** Save

Perform the indicated operations for the matrices $A=\begin{bmatrix} 1 & 3 \\ 4 & 6 \end{bmatrix}$ and $B=\begin{bmatrix} 4 & 0 \\ 5 & 6 \end{bmatrix}$

a. A + B
b. A – B
c. 5A
d. 2A+B
e. determinant of A

Attach local file Browse...

Question 8 **10 points** Save

Calculate the inverse of the following matricesa. $\begin{bmatrix} 1 & 3 \\ 4 & 5 \end{bmatrix}$

b. $\begin{bmatrix} 4 & 0 \\ 5 & 6 \end{bmatrix}$

c. $\begin{bmatrix} 2 & 5 \\ 1 & 1 \end{bmatrix}$

d. $\begin{bmatrix} -5 & 7 \\ -3 & 4 \end{bmatrix}$

Attach local file Browse...

Question 9 **10 points** Save

Write the system of equations as a matrix equation

$$\begin{aligned} 5x+y+z&=a \\ 4x-2y+5z&=-2 \\ x-7y+6z&=7 \end{aligned}$$

Attach local file Browse...

Question 10 **10 points** Save

Students at ACC must earn 90 credits to obtain an Associate's degree. Three students find that they all have a GPA of 3.3 even though they do not have the same number of credits. The students hope to increase their GPAs to a 3.8 by the time they have earned 90 credits. One student has earned 50 credits, another has earned 40, and the other, 85. Is it possible for all of the students to increase their GPA by the time they earn 90 credits?

Attach local file Browse...

Save Submit

Take Assessment: Section II Exam

Name Section II Exam

Instructions These questions come from the Unit Discussion Assignments found in each course unit. To help prepare your answers, you should use your text and other references and readings which pertain to the topic in question. You may enter and save your answers for a portion of this exam by using the "Save" button. Once all questions have been answered, click the "Submit" button. The "Save" and "Submit" buttons are located at the bottom of the exam.**Complete the problem below and show your work. This exam is not to be submitted by e-mail but only as an online exam by clicking the submit button.**

NOTE: In order to respond you will need to upload your saved document into Blackboard by clicking on the "browse" button in each question.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **10 points** Save

For the given sets, answer the following questions
A={1, 2, 3, 4}
B={1, 2, 5, 7}
C={3, 4, 5, 7} a.B ∪ C
b.A'
c.A ∩ C
d.A ∩ A '
e.A ∪ B

Attach local file Browse...

Question 2 **10 points** Save

A and B are finite subsets of the universal set U with n(U)=10, n(A)=7, n(A ∩ B)=2 and n(A ∪ B)=9. Find the cardinality of each of the specified sets. a. B
b. B'
c.A ∩ B

Attach local file Browse...

Question 3 **10 points** Save

Calculate the following expressions a. P(4, 2)
b. P(8, 7)
c. C(9, 7)
d. C(8, 0)

Attach local file Browse...

Question 4 **10 points** Save

In some states, license plates are made with three numbers (0-9) followed by three letters. How many of these license plates can be made if numbers and letters may be repeated?

Attach local file Browse...

Question 5 **10 points** Save

A bag contains 10 red, 12 green, and 8 yellow marbles. Assuming that all marbles are equally likely to be picked from the bag, what is the probability that the second marble is yellow, given that the first marble was yellow?

Attach local file Browse...

Question 6 **10 points** Save

Given the following information, calculate the Predictive value positive and the predictive value negative. Prevalence =5%
Sensitivity =85%
Specificity =74%

Attach local file Browse...

Question 7 **10 points** Save

Find a steady state distribution vector for the Markov chain with transition matrix $P = \begin{bmatrix} 0.25 & 0.75 \\ 0.2 & 0.8 \end{bmatrix}$

Question 8 **A campus club sells 500 raffle tickets at a price of $2 each. The raffle offers one $1A00 dollar prize, two $50 prizes, and five $25 prizes. What is the expected value of a raffle**

ticket? (number 12 in section 8.4 of text)

Attach local file Browse...

Question 9 **10 points** Save

Give the folloing data set
50, 40, 33, 37, 60 a. Find the mean, median and mode
b. Find the standard deviation

Attach local file Browse...

Question 10 **10 points** Save

Suppose a normal distribution has μ =1.5 and σ =0.3. Find the z-score and the associated area under the standard normal curve for the following values of x. a. 2.3
b. 1.7
c. 2
d. 1.9
e. 2.1

Attach local file Browse...

Save Submit

Take Assessment: Unit II Quiz

Name Unit II Quiz

Instructions Mark the correct answer for each question. Please remember that textbooks and other reference materials can be used to complete this exam.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **5 points** Save

What type of matrix is the following matrix? $\begin{bmatrix} 1 & 6 & 9 & 4 \end{bmatrix}$

- (•) row
- ( ) column
- ( ) square
- ( ) rectangle

Question 2 **5 points** Save

A matrix that joins together the coefficient matrix and the column matrix is called

- ( ) Square matrix
- ( ) Augmented matrix
- ( ) Identity matrix
- ( ) Inverse matrix

Question 3 **5 points** Save

Find a_{42} for the matrix $A=\begin{bmatrix} 1 & 2 & 3 \\ 6 & 5 & 4 \\ 8 & 5 & 2 \\ 7 & 4 & 1 \end{bmatrix}$

- ( ) 2
- ( ) 5
- ( ) 8
- ( ) 4

Question 4 **5 points** Save

Rewrite the following statement using stand alone notation. “Multiply row 2 by 5 and place it in row 1”

- ( ) $5R_2 \rightarrow R_1$
- ( ) $5R_1 \rightarrow R_2$
- ( ) $R_1 \rightarrow R_2$
- ( ) $R_2 \rightarrow R_1$

Question 5 **5 points** Save

Find a_{21} for the matrix $A=\begin{bmatrix} 2 & 0 \\ 4 & 5 \end{bmatrix}$

- ( ) 5
- ( ) 4
- ( ) 0
- ( ) 2

Question 6 **5 points** Save

Which of the four criteria for reduced row echelon form does the following matrix fail to meet? $\left[\begin{array}{ccc|c} 1 & 0 & 0 & 6 \\ 0 & 0 & 1 & 5 \\ 1 & 0 & 0 & 7 \end{array}\right]$

- ( ) The leading entry in each row is 1.
- ( ) The leading entry in each row is the only nonzero entry in its corresponding column.
- ( ) The leading entry in each row is to the right of the leading entry in the row above it
- ( ) All rows of zeros, if any, are at the bottom of the matrix

Question 7

All of the following are acceptable row operations except

- Interchange the position of two rows
- Multiply a row by a nonzero number
- Add a nonzero multiple of one row to a nonzero multiple of a another row and replace either row with the result
- Interchange the position of two columns

Question 8 **5 points** Save

A system of equations with infinitely many solutions is called

- Inconsistent
- Consistent
- Dependent
- Independent

Question 9 **5 points** Save

Perform the indicated row operation on the give matrix. $2R_1 - R_2 \to R_2$

$$\left[\begin{array}{cc|c} 1 & 2 & 1 & 0 \\ 2 & 0 & 1 & 1 \end{array}\right]$$

- $\left[\begin{array}{cc|c} 1 & 2 & 1 & 0 \\ 1 & 0 & 0 & -1 \end{array}\right]$
- $\left[\begin{array}{cc|c} 1 & 2 & 1 & 0 \\ 2 & 0 & 1 & 1 \end{array}\right]$
- $\left[\begin{array}{cc|c} 1 & 2 & 1 & 0 \\ 0 & 4 & 1 & -1 \end{array}\right]$
- $\left[\begin{array}{cc|c} 1 & 2 & 1 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]$

Question 10 **5 points** Save

Give the dimensions of the following matrix. $\begin{bmatrix} 1 \\ 2 \\ 5 \end{bmatrix}$

- 2 X 4
- 3 X 1
- 1 X 3
- 5 X 2

Question 11 **5 points** Save

Solve the system.

$$\begin{aligned} 3x + 2y &= 5 \\ 6x + 4y &= 8 \end{aligned}$$

- No solution, inconsistent system
- Infinitely many solutions
- (2,0)
- (0,6)

Question 12 **5 points** Save

Solve the system of equations using elimination.

$$\begin{aligned} 3x - y &= -4 \\ x + 3y &= 12 \end{aligned}$$

- (4, 0)
- (2, 0)
- (0, 4)
- (0, 2)

Question 13 **5 points** Save

Write the following augmented matrix as a system of equations $\left[\begin{array}{cc|c} 3 & 2 & 0 & 6 \\ 4 & 0 & 5 & 5 \end{array}\right]$

- $3x + 2y = 6$, $4x + 5z = 5$
- $3x + 6y = 2$, $4x + 5z = 5$
- $3x + 2y = 6$, $4y + 5z = 5$
- $3x + 2y = 6$, $5x + 4z = 2$

Question 14 **5 points** Save

Which of the following statements is false concerning systems of linear equations in two variables?

- It is a collection of two linear equations
- The solution is an ordered pair
- The solution is the point of intersection of the two equations
- The solution can only satisfy one of the equations

Question 15 **5 points** Save

A matrix that has the same number of rows as columns is called a

- Row matrix
- Column matrix
- Square matrix
- Identity matrix

Question 16 **5 points** Save

A system of equations without a solution is said to be

- Inconsistent
- Consistent
- Dependent
- Independent

Question 17 **5 points** Save

Solve the system.

$2x - 8y = 4$
$x - 4y = 2$

- No solution, inconsistent system
- Infinitely many solutions
- (2,0)
- (0,6)

Question 18 **5 points** Save

Rewrite the system of equations as an augmented matrix, and then reduce the matrix to find the solutions.

$6x + 2y = 10$
$-x - 2y = -5$

- (2, 1)
- (1, 2)
- (3, 2)
- (2, 3)

Question 19 **5 points** Save

Determine the dimensions of the matrix $T = \begin{bmatrix} 125 \\ 421 \end{bmatrix}$

- 2 X 3
- 2 X 4
- 3 X 1
- 1 X 3

Question 20 Solve the system of equations using substitution

$x - 5y = 8$
$x = 6y$

- (36, 6)
- (24, 4)
- (64, 7)
- (48, 8)

Save Submit

Take Assessment: Unit III Quiz

Name Unit III Quiz

Instructions Mark the correct answer for each question. Please remember that textbooks and other reference materials can be used to complete this exam.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **5 points** Save

Which of the following can be considered an identity matrix?

- $\begin{bmatrix} 1 & 10 \\ 0 & 0 \end{bmatrix}$
- $\begin{bmatrix} 0 & 1 \\ 4 & 0 \end{bmatrix}$
- $\begin{bmatrix} 0 & 0 \\ 1 & 0 \end{bmatrix}$
- $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

Question 2 **5 points** Save

The formula ad-bc is used to obtain the

- Inverse
- Product
- Identity
- Determinant

Question 3 **5 points** Save

Find the determinant of the matrix $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$

- 2
- 3
- -2
- -4

Question 4 **5 points** Save

Find the inverse of $\begin{bmatrix} 4 & 6 \\ 3 & 3 \end{bmatrix}$

- $\begin{bmatrix} -\frac{1}{2} & 1 \\ \frac{1}{2} & -\frac{2}{3} \end{bmatrix}$
- $\begin{bmatrix} 3 & -6 \\ -3 & 4 \end{bmatrix}$
- -1/6
- The inverse does not exist

Question 5 **5 points** Save

What type of operation “scales” the entries of a matrix by making them larger or smaller by a given factor?

- Matrix multiplication
- Scalar multiplication
- Matrix addition
- Matrix subtraction

Question 6 Find the inverse of the matrix

$$\begin{bmatrix} 4 & 2 & 1 \\ 5 & 3 & 2 \\ 0 & 3 & 2 \end{bmatrix}$$

- Singular
- 0
- $\begin{bmatrix} 3 & 2 & 5 \\ 5 & 0 & 2 \\ 3 & 5 & 2 \end{bmatrix}$
- $\begin{bmatrix} 4 & 3 & 1 \\ 0 & 2 & 2 \\ 5 & 3 & 2 \end{bmatrix}$

Question 7 **5 points** Save

Given that $D = \begin{bmatrix} 2 & 4 \\ 6 & 8 \end{bmatrix}$, $find\ 3D$

- $\begin{bmatrix} 6 & 12 \\ 18 & 24 \end{bmatrix}$
- $\begin{bmatrix} 1 & 0 \\ 2 & 4 \end{bmatrix}$
- $\begin{bmatrix} 24 & 18 \\ 6 & 12 \end{bmatrix}$
- $\begin{bmatrix} 0 & 2 \\ 4 & 6 \end{bmatrix}$

Question 8 **5 points** Save

Given that, $A = \begin{bmatrix} 1 & 7 & 8 \\ 5 & 3 & 2 \\ 0 & 9 & 4 \end{bmatrix} and\ B = \begin{bmatrix} 3 & -2 & 4 \\ 0 & 3 & 1 \\ 5 & 7 & -1 \end{bmatrix}, calculate\ A + B$

- $\begin{bmatrix} 2 & 5 & 8 \\ 1 & 3 & 6 \\ 5 & 4 & 9 \end{bmatrix}$
- $\begin{bmatrix} 4 & 5 & 12 \\ 5 & 6 & 3 \\ 5 & 16 & 3 \end{bmatrix}$
- $\begin{bmatrix} 2 & 1 & 0 \\ 3 & 4 & 5 \\ 9 & 2 & 4 \end{bmatrix}$
- $\begin{bmatrix} 2 & -9 & -4 \\ 3 & 7 & 11 \\ 5 & 6 & 2 \end{bmatrix}$

Question 9 **5 points** Save

Find the inverse of $\begin{bmatrix} 2 & 3 \\ 0 & 0 \end{bmatrix}$

- $\begin{bmatrix} -\frac{1}{2} & 1 \\ \frac{1}{2} & -\frac{2}{3} \end{bmatrix}$
- $\begin{bmatrix} 3 & -6 \\ -3 & 4 \end{bmatrix}$
- -1/6
- The inverse does not exist

Question 10 **5 points** Save

Find the determinant of $\begin{bmatrix} 4 & 6 \\ 3 & 3 \end{bmatrix}$

- -12
- -18
- -6
- 0

Question 11 **5 points** Save

Is the matrix $\begin{bmatrix} 2 & 3 \\ 0 & 2 \end{bmatrix}$ invertible or singular and why? (Use the determinant to determine this)

- Singular because the determinant equals 0
- Singular because the determinant equals 4
- Invertible because the determinant equals 4
- Invertible because the determinant equals 0

Question 12 **5 points** Save

Determine the product AB given that $A = [1 \quad 5 \quad 2] \; and \; B = \begin{bmatrix} 1 \\ 4 \\ 2 \end{bmatrix}$

- 25
- 20
- 15
- 30

Question 13 **5 points** Save

Find A - B given that $A = \begin{bmatrix} 6 & 5 \\ 4 & 3 \end{bmatrix} and \; B = \begin{bmatrix} 0 & 1 \\ 2 & 3 \end{bmatrix}$

- $\begin{bmatrix} 5 & 1 \\ 7 & 6 \end{bmatrix}$
- $\begin{bmatrix} 5 & 4 \\ 6 & 6 \end{bmatrix}$
- $\begin{bmatrix} 6 & 4 \\ 0 & 2 \end{bmatrix}$
- $\begin{bmatrix} 6 & 4 \\ 2 & 0 \end{bmatrix}$

Question 14 **5 points** Save

Which property of matrix addition is demonstrated below $\begin{bmatrix} 6 & 5 \\ 4 & 3 \end{bmatrix} + 0 = 0 + \begin{bmatrix} 6 & 5 \\ 4 & 3 \end{bmatrix} = \begin{bmatrix} 6 & 5 \\ 4 & 3 \end{bmatrix}$

- Additive associative
- Additive commutative
- Additive identity
- Additive inverse

Question 15 **5 points** Save

Find 0.5A if $A = \begin{bmatrix} 8 & 6 & 4 \\ 2 & 4 & 1 \\ 0 & 12 & 10 \end{bmatrix}$

- $\begin{bmatrix} 4 & 3 & 2 \\ 1 & 2 & 0.5 \\ 0 & 6 & 5 \end{bmatrix}$
- $\begin{bmatrix} 1 & 2 & 3 \\ 0 & 6 & 5 \\ 4 & 3 & 2 \end{bmatrix}$

- $\begin{bmatrix} 0.5 & 3 & 2 \\ 1 & 6 & 5 \\ 0 & 3 & 4 \end{bmatrix}$
- $\begin{bmatrix} 2 & 3 & 4 \\ 0.5 & 2 & 1 \\ 5 & 6 & 0 \end{bmatrix}$

Question 16 **5 points** Save

Which of the following statements is true of the inverse?

- The inverse does not exist if the determinant is one
- The inverse can be multiplied by the inverse of a matrix to obtain a solution to a system of equations
- The inverse is singular if the inverse exists
- The inverse is the product of a matrix and the identity matrix

Question 17 **5 points** Save

Determine the product of $\begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 0 \end{bmatrix} and \begin{bmatrix} 2 & 1 \\ 4 & 0 \\ 1 & 3 \end{bmatrix}$

- $\begin{bmatrix} 13 & 10 \\ 4 & 0 \end{bmatrix}$
- $\begin{bmatrix} 4 & 0 \\ 13 & 10 \end{bmatrix}$
- $\begin{bmatrix} 10 & 13 \\ 0 & 4 \end{bmatrix}$
- Cannot compute the product

Question 18 **5 points** Save

The determinant of a matrix that does not have an inverse is

- 1
- 0
- undefined
- ½

Question 19 **5 points** Save

Determine the product AB given that $A = [3 \quad 0 \quad 4 \quad 5] and B = \begin{bmatrix} 1 \\ 12 \\ 0 \\ 2 \end{bmatrix}$

- [12]
- [13]
- [14]
- [15]

Question 20 **5 points** Save

Which property of scalar multiplication is demonstrated below?

$$1 \cdot \begin{matrix} 4 & 1 \\ 0 & -1 \end{matrix} = \begin{matrix} 4 & 1 \\ 0 & -1 \end{matrix}$$

- Distributive
- Multiplicative Associative
- Scalar Unit 1
- Scalar Unit 2

Save Submit

Take Assessment: Unit IV Quiz

Name Unit IV Quiz

Instructions Mark the correct answer for each question. Please remember that textbooks and other reference materials can be used to complete this exam.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **5 points** Save

How many three letter words can be formed allowing repetition of letters?

- $3 \cdot 26$
- 26^3
- $26 \cdot 25 \cdot 24$
- 3^{26}

Question 2 **5 points** Save

What is the cardinality of the Cartesian product A X B when A = {5, 7} and B= {1, 2, 3, 4, 5}

- 7
- 8
- 9
- 10

Question 3 **5 points** Save

A new restaurant in town is offering a limited menu from which you can choose one meat, one vegetable, one bread choice, and one dessert. If there are 4 meat selections, 7 vegetable selections, 2 bread selections, and 3 desserts, how many different meals can be created?

- 24
- 16
- 168
- 184

Question 4 **5 points** Save

C(12, 3)

- $\frac{12!}{3!}$
- $12 \cdot 11 \cdot 10$
- $12 \cdot 11 \cdot 10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2$
- 220

Question 5 **5 points** Save

There are 30 members of the BETA club at a certain high school. In how many ways can a president, secretary, and treasurer be elected?

- $\frac{30!}{3!}$
- $\frac{30 \cdot 29 \cdot 28}{3 \cdot 2}$
- $\frac{30!}{27!}$
- 27!

Question 6 **5 points** Save

Use the cardinality of a union to solve: If
$n(S) = 10, n(R \cup S) = 16, \text{ and } n(R \cap S) = 2, \text{ then } n(R) =$

- 8
- 4
- 6
- 2

Question 7 **5 points** Save

P(8, 5)=

- $8 \cdot 7 \cdot 6 \cdot 5 \cdot 4$
- $\frac{8!}{5!3!}$
- $\frac{5!}{8!}$
- $8 \cdot 7 \cdot 6 \cdot 5$

Question 8 **5 points** Save

An exam contains 5 multiple-choice questions, each having 4 possible answers. In how many different ways can the exam be completed?

- $C(5, 4)$
- 5^4
- 4^5
- $5 \cdot 4 \cdot 3 \cdot 2$

Question 9 **5 points** Save

If $n(S) = 12, n(R \cup S) = 18, \text{ and } n(R \cap S) = 3, \text{ then } n(R) =$

- 4
- 10
- 8
- 9

Question 10 **5 points** Save

Consider the following sets.

$U = \{1, 2, 3, 4, 5, 6, 7, 8\}$
$A = \{2, 4, 6, 8\}$
$B = \{1, 2, 3, 5, 7\}$
$A' \cap B$ *is the set.*

- $\emptyset$
- {1, 3, 5, 7}
- {2}
- {4, 6, 8}

Question 11 **5 points** Save

In how many ways can a hand of five cards be dealt from an ordinary deck of 52 cards?

- $\frac{52!}{5!}$
- $52 \cdot 51 \cdot 50 \cdot 49 \cdot 48$
- 47!
- $\frac{52!}{5!47!}$

Question 12 **5 points** Save

Four women and three men sign up to work weekends at a small restaurant. Four of them will be scheduled to work this weekend. Find the probability that the group selected contains men and women.

- .971
- .008
- .865
- .783

Question 13 **5 points** Save

Which of the following events are mutually exclusive?

- Living in Baltimore and working in Washington, D.C.
- Being a college student and being a high school graduate
- Being a banker and a rock collector
- Being a mother and being a grandfather

Question 14 **5 points** Save

What is the Cartesian product A X B when A= {R, S} and B= {1, 2, 3}

- {(R, 1), (R, 2), (R, 3), (S, 1), (S, 2), (S, 3)}
- {(1,1), (2.2), (3, 3), (S, S), (S, R), (R, 3)}
- {(R, S), (S, R), (1, 2), (3, 3), (3, 2), (S, 3)}
- {(3, 2), (1, 3), (3, 1), (S, 1), (S, 2), (S, 3)}

Question 15 **5 points** Save

Consider the following sets.

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

Which of the following statements is true?

- $A \cap B = U$
- A is a subset of $A \cap B$
- $A \cap B = \emptyset$
- $A \cap B$ is the subset of A

Question 16 **5 points** Save

Consider the following sets.

$U = \{1, 2, 3, 4, 5, 6, 7, 8\}$
$A = \{2, 4, 6, 8\}$
$B = \{1, 2, 3, 5, 7\}$
$(A \cup B')$ *is the set.*

- $\emptyset$
- {1, 3, 5, 7}
- {2}
- {4, 6, 8}

Question 17 **5 points** Save

For a school fundraiser, Allison is selling cookies. She has five chocolate chip cookies, 3 oatmeal cookies, and 2 peanut butter cookies. How many cookies does Allison have for sale?

- 8
- 10
- 12
- 14

Question 18 **5 points** Save

Given a set of numbers S={5, 10, 11, 15, 17, 18}, what is the probability of randomly selecting a number from the set that is a multiple of 5?

- 50%
- 25%
- 200%
- 20%

Question 19 **5 points** Save

P(12, 3)

- $12 \cdot 11 \cdot 10$
- $\frac{3!}{12!}$
- $\frac{12!}{9!3!}$
- $12 \cdot 11 \cdot 10 \cdot 9$

Question 20 **5 points** Save

A set D is a subset of set C provided that

- At least one element of c is not an element of D
- At least one element of d is not an element of C
- Every element of D is an element of C
- Every element of c is an element of D

Take Assessment: Unit V Quiz

Name Unit V Quiz

Instructions Mark the correct answer for each question. Please remember that textbooks and other reference materials can be used to complete this exam.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **5 points** Save

The probability that a person with a positive test result will actually have the disease is referred to as

- PVP
- PVN
- Sensitivity
- Specificity

Question 2 **5 points** Save

The probability of moving from a state i to a state j is called the

- Stochastic process
- Transition matrix
- Transition probability
- State transition

Question 3 **5 points** Save

Suppose that P(E) = 0.4, the P(F)= 0.5 and the P(E∩F)=0.1. Calculate P(F|E).

- 0.2
- 0.45
- 0.25
- 0.1

Question 4 **5 points** Save

Sensitivity is

- The probability that a person with a negative test result will not have the disease
- The probability that a person with a positive test result will actually have the disease
- The probability that a test result will be positive when the test is administered tto a person with the disease
- The probability that a test result will be negative when the test is administered to a person without the disease

Question 5 **5 points** Save

Are the following two events independent or dependent?
Two dice are rolled.
E=the first dice shows a 3
F= the second dice shows a 5

- Independent
- Dependent

Question 6 **5 points** Save

What does a probability tree have that a regular decision tree does not?

- A starting point
- More branches
- More choices
- Annotated probability

Question 7 **5 points** Save

The known percentage of people in the population that are infected is referred to as

- Sensitivity
- PVP
- PVN
- Prevalence

Question 8 **5 points** Save

The statement P(A| B) reads

- The probability that event A occurs after event B
- The probability that event A occurs before event B
- The probability that event A occurs given event B
- The probability that event A occurs during event B

Question 9 **5 points** Save

A couple has 8 foster children, including 3 girls and 5 boys. Two-thirds of the girls have brown eyes. What is the probabiliy that a randomly selected child is a brown-eyed girl?

- 50%
- 25%
- 75%
- 22.5%

Question 10 **5 points** Save

P(A|B)=.85 and P(B) = .12. Find P(A∩B)

- 0.343
- 0.102
- 0.574
- 0.054

Question 11 **5 points** Save

If the sum of the entries in each ro of a squre matrix with nonnegative entries is 1, then the matrix is called a

- Stochastic process
- Stochastic matrix
- State matrix
- Transition matrix

Question 12 **5 points** Save

Suppose that P(E) = 0.4, the P(F)= 0.5 and the P(E∩F)=0.1. Calculate P(E|F).

- 0.2
- 0.45
- 0.25
- 0.1

Question 13 **5 points** Save

Given the following information, calculate the PVN.
Prevalence = 15%
Sensitivity = 40%
Specificity = 20%

- 56.3%
- 22.1%
- 65.4%
- 86.9%

Question 14 **5 points** Save

Which of the following statements about Bayes' theorem is false?

- Bayes' Theorem can be used in educational analysis and drug testing
- Bayes' theorem can be applied to information from a probability tree
- Bayes' theorem is always the simplest method
- Bayes's theorem can be used in e-mail filtering

Question 15 **5 points** Save

Given the transition matrix $P = \begin{bmatrix} 0.2 & 0.8 \\ 0.4 & 0.6 \end{bmatrix}$.

What is the probability of moving from state S_1 to state S_2?

- 0.8
- 0.2
- 0.4
- 0.6

Question 16 **5 points** Save

Specificity is

- The probability that a person with a negative test result will not have the disease
- The probability that a person with a positive test result will actually have the disease
- The probability that a test result will be positive when the test is administered tto a person with the disease
- The probability that a test result will be negative when the test is administered to a person without the disease

$$P = \begin{bmatrix} 0.2 & 0.8 \\ 0.4 & 0.6 \end{bmatrix}$$

- [2]
- [1]
- $\begin{bmatrix} 0.36 & 0.64 \\ 0.32 & 0.68 \end{bmatrix}$
- $\begin{bmatrix} 0.4 & 0.16 \\ 0.16 & 0.36 \end{bmatrix}$

Question 18 **5 points** Save

Predictive-value negative (PVN) is

- The probability that a person with a negative test result will not have the disease
- The probability that a person with a positive test result will actually have the disease
- The probability that a test result will be positive when the test is administered tto a person with the disease
- The probability that a test result will be negative when the test is administered to a person without the disease

Question 19 **5 points** Save

Given the following information, compute the PVP using Bayes' Theorem.
Prevalence = 20%
Sensitivity = 50%
Specificity = 75%

- 25%
- 33.3%
- 45%
- 60.4%

Question 20 **5 points** Save

If the probabilities of subsequent events are not altered by previous choices then the events are said to be

- Independent events
- Unaltered events
- Dependent events
- Conditional events

Save Submit

Take Assessment: Unit VI Quiz

Name Unit VI Quiz

Instructions Mark the correct answer for each question. Please remember that textbooks and other reference materials can be used to complete this exam.

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Question Completion Status:

Question 1 **5 points** Save

Which of the following is also referred to as the average?

- Mean
- Standard deviation
- Median
- Mode

Question 2 **5 points** Save

How do you calculate the deviation from the mean?

- Add the mean to each number
- Subtract the mean from each number
- Multiply the mean by each number
- Divide each number by the mean

Question 3 **5 points** Save

Which of the following is true?

- The graph of a probability distribution is a histogram.
- A histogram is a pie chart.
- The number of times a value occurs is referred to as a probability distribution.
- The collection of probabilities is a frequency distribution.

Question 4 **5 points** Save

To find the expected value of a random variable, you must

- Multiply all probabilities together
- Multiply all random variables together
- Multiply each value of the random variable by its associated probability and sum the results
- Add all probabilities together

Question 5 **5 points** Save

What is the mode of the data set 23, 44, 22, 23, 23, 44, 23, 55?

- 23
- 44
- 22
- 55

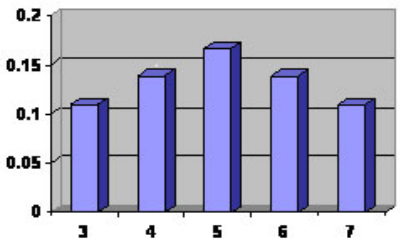
Question 6 **5 points** Save

Calculate the standard deviation of the following set of scores: 45, 52, 45, 40.

- 45
- 45.5
- 5.77
- 4.93

Question 7 **5 points** Save

Which table of data does the following histogram represent?



x	10	15	20	25	30
p(X=x)	4/36	5/36	6/36	5/36	4/36

x	1	2	3	4	5
p(X=x)	4/36	5/36	6/36	5/36	4/36

x	3	4	5	6	7
p(X=x)	4/36	5/36	6/36	5/36	4/36

x	3	4	5	6	7
p(X=x)	8/36	9/36	11/36	9/36	8/36

Question 8 **5 points** Save

Find the expected value for the probability distribution below

x	0	1	2	3	4
p(X=x)	.5	.2	.1	.1	.1

- 1.1
- 41.1
- 2.35
- 52.5

Question 9 **5 points** Save

The standard deviation is the square root of the

- Mean
- Sum of the means
- Variance
- Median

Question 10 **5 points** Save

All of the following are properties of a normal distribution *except*

- The graph of the distribution is a bell shaped curve
- The mean, median and mode are different
- The graph is symmetric about a vertical line that passes through the population mean
- The area below the graph of the distribution and above the horizontal axis is equal to 1.

Question 11 **5 points** Save

Use table 8.21 on page 585 of the text to determine the area beneath the standard normal curve on the interval [0, 2.05].

- 0.4963
- 0.4938
- 0.4798
- 0.4817

Question 12 **5 points** Save

Suppose a normal distribution has μ =1.4 and σ =0.2, calculate the z-score for x= 3.5.

- 1.05
- 2.5
- 3
- 0.7

Question 13 **5 points** Save

Which of the following choices is not a measure of central tendency?

- Mean
- Standard deviation
- Median
- Mode

Question 14 **5 points** Save

Which of the following is defined as a value that is repeated most often?

- Mean
- Standard deviation
- Median
- Mode

Question 15 **5 points** Save

Determine the probability that a randomly selected data value will fall within 1.67 standard deviations of the mean.

- 45.25 percent
- 90.5 percent
- 85.5 percent
- 30.25 percent

Question 16 **5 points** Save

What is the correct interval of values within one standard deviation of the mean if the mean of a certain set of data is 50 and the standard deviation is 10?

- [45, 50]
- [50, 60]
- [40, 60]
- [40, 50]

Question 17 **5 points** Save

Calculate the mean for the data 100, 88, 45, 76, 90.

- 76
- 89.5
- 79.8
- 62.3

Question 18 **5 points** Save

Calculate the z-score for x = 20 given a normal distribution with $\mu = 25$ and $\sigma = 4$.

- -2.5
- 1.5
- .75
- -1.25

Question 19 **5 points** Save

Find the expected value for the probability distribution below

x	0	1	2	3	4
p(X=x)	.15	.2	.1	.25	.3

- 1.1
- 2.35
- 4.15
- 52.5

Question 20 **5 points** Save

A die is rolled 30 times. What is the expected value that a 5 will appear?

- 2
- 3
- 4
- 5

Save Submit