Müəllimin adı: Huseynova Günel Şamxal

Fənnin adı: Linear Algebra and Calculus

Qrupun nömrəsi: 1045

 **Final**

**Mövzu 1: Functions and Graphs**

1. Problem solving: Find the domain, range and inverse of the function
2. Problem solving: Let f(x)  and  g(x) Find the excluded value of  function.
3. Problem solving: *When* and *g(x)*. Then find and .

**Mövzu 2 : Systems of Linear Equations**

1. Problem solving: Solve the system by method of Gaussian Elimination
2. Problem solving: Solve the system by Cramer’s rule
3. Problem solving: Solve the system by method of Gaussian Elimination

**Mövzu 3: Matrices and Matrix Operations**

1. Problem solving: , , then find the unknown matrix *X.*
2. Problem solving: ,  and .If *A+B=C,* then find 
3. Problem solving: Multiply this two matrices

1. Problem solving:  , find .
2. Problem solving: ,  and the condition *AB=BA* is true. Then find *x.*
3. Problem solving: , , then find .
4. Problem solving: Find the inverse of 3x3 matrix.
5. Problem solving: Find the inverse of matrix and then check your answer.

**Mövzu 4: Determinants**

1. .
2. .

**Mövzu 5: Eigenvalues and Eigenvectors**

1. Poblem solving:Find eigenvalues and eigenvectors of 2x2 matrix.

1. Poblem solving:Find eigenvalues and eigenvectors of 2x2 matrix.
2. Poblem solving:Find eigenvalues of 3x3 matrix.
3. Poblem solving:Find eigenvalues of 3x3 matrix.

**Mövzu 6: Linear vector space**

1. Problem solving: Check the systems of , ,  vector are linearly independent or dependent.
2. Problem solving: Check the systems of , ,  vector are linearly independent or dependent.
3. Problem solving: Check the systems of , ,  vector are linearly independent or dependent.

**Mövzu 7: Leontief Model**

 1.Leontief Model

**Mövzu 8: Limit of a function**

1. Compute the limit.
2. Compute the limit.
3. Compute the limit.
4. Compute the limit.
5. Compute the limit.

**Mövzu 9: Continuity of function**

1. Determine if the following function is continuous
2. Determine if the following function is continuous
3. Determine if the following function is continuous
4. Determine if the following function is continuous

**Mövzu 10: *The Definition of the Derivative***

1. Find the derivative of a function using the definition a derivative
2. Find the derivative of a function using the definition a derivative
3. Find the derivative of a function using the definition a derivative
4. Find the derivative of a function using the definition a derivative

**Mövzu 11: Differential of a function**

1. Compute the differential of following function
2. Compute the differential of following function
3. Compute the differential of following function
4. Find of compound function.

**Mövzu 12: Higher order derivatives of a function**

1. Find the first second derivatives of following function.
2. Find the first second derivatives of following function
3. Find the first second derivatives of following function
4. Find the first second derivatives of following function
5. Find the second derivative of parametric function
6. Find the second derivative of a parametric function
7. Find the first second derivatives of following function

**Mövzu 13: Graphing and optimization**

1. Find a value of *c* such that the conclusion of this mean value theorem is satisfied for  ,
2. Find a value of *c* applying of Rolle’s theorem  ,
3. Find a value of *c* such that the conclusion of this mean value theorem is satisfied for  ,

**Mövzu 14: Infinite Series**

1. Determine if the series is convergent or divergent
2. Determine if the series is convergent or divergent
3. Determine if the series is convergent or divergent

**Mövzu 15: Integrals**

1.Evaluate the integral

2.Evaluate the integral 

3.Evaluate the integral

1. Evaluate the integral

**Mövzu 16 : Integrals (advanced topic)**

1. Evaluate the integral by partition formula

2. Evaluate the integral

3. Evaluate the integral

1. Evaluate the integral
2. Evaluate the integral

**Mövzu 17: Differential equation**

1.Solve the separable differential equation

2.Solve the separable differential equation

3.Solve the linear differential equation

4.Solve the linear differential equation

**Mövzu 18: Functions of many variables**

1. Find all of the first order partial derivatives of function

2. Find all of the first order partial derivatives of function

3. Find all of the first order partial derivatives of function

**Mövzu 19: *Taylor Polynomials and Approximations***

1. Find the Taylor Series for about 
2. Find the Taylor Series for about .
3. Find the Taylor Series for about 