Müəllimin adı: Həsənova Günel Şamxal

Fənnin adı: Linear Algebra and Calculus

Qrupun nömrəsi: 1083

**Quiz 1**

**Mövzu 1: Functions and Graphs**

1. Find the domain of the function .
2. Let f(x) = 3x + 4 and  g(x) = –5/x + 7 Find .
3. *When f(x)=2x+5* and *g(x)=4x-3*. Then find and .

**Mövzu 2 : Systems of Linear Equations**

1. Solve the system by Gaussian Elimination 
2. Solve the system by Gaussian Elimination 
3. Solve the system by Gaussian Elimination 

**Mövzu 3: Matrices and Matrix Operations**

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



1.  , find .
2. ,  and the condition *AB=BA* is true. Then find y*.*
3. , , then find .
4. , then find .
5. Find matrices if given  , .

**Mövzu 4: Determinants**

1. .
2. .

**Mövzu 5: Eigenvalues and Eigenvectors**

1. Let .Then find eigenvalues and eigenvectors of this matrix.
2. Let .Then find eigenvalues and eigenvectors of this matrix.
3. Let .Then find eigenvalues of this matrix .
4. Let .Then find eigenvalues of this matrix.

**Mövzu 6: Linear vector space**

1. Check the system of vectors , ,  are linearly independent or linearly dependent vector system?
2. Check the system of vectors , ,  are linearly independent or linearly dependent vector system?
3. Check the system of vectors , ,  are linearly independent or linearly dependent vector system?

**Quiz 2**

**Mövzu 7: Leontief Model**

1. About the open Leontief Model .
2. Total cost and total revenue. Equilibrium price
3. Marginal cost

**Mövzu 8 : Infinite Sequences and Series**

1. Prove that the sequence  **is decreasing and convergent .
2. Prove that the sequence ** is bounded.

**Mövzu 9: Limit of a function**

1. Compute 
2. Compute 
3. Compute 
4. Compute 

**Mövzu 10: Continuity of function**

1. Determine if the following function is continuous at *x=1*



2. Determine if the following function is continuous at *x=-2*



3. Determine if the following function is continuous at *x=0*



4. Determine if the following function is continuous at *x=3*



**Mövzu 11: *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



**Mövzu 12: Differential of a function**

**1.** Compute the differential of following function



**2.** Compute the differential of following function



**Mövzu 13: Higher order derivatives of a function**

**1.** Find the first four derivatives of following function

,

**2.** Find the first four derivatives of following function

,

3. Find the second order derivatives of following function

,

4. Find for .

5. Find the derivative of a parametric function

, .

6. Find the derivative of a parametric function

, .

7. Find the derivative of a parametric function

, .

**Exam**

**Mövzu 14: 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 15: 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 16: Integrals**

1. Evaluate the integral 
2. Evaluate the integral 
3. Evaluate the integral 

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

1. Evaluate the integral 
2. Evaluate the integral 
3. Evaluate the integral by partition formula
4. Evaluate the integral by partition formula 

**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 

4. 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 .
4. Find the Taylor Series for  about .