UNEC

Final-I-18/19

Topics

№7. Indefinite integrals.

51. Problem solving: Find the indefinite integral of the function with the linear-composite root.

52. Problem solving: Find the indefinite integral by the method of the perfect square separation with the arctangent antiderivative.

53. Problem solving: Find the indefinite integral by the method of the perfect square separation with the arcsine antiderivative.

54. Problem solving: Find the indefinite integral by the method of the indefinite coefficients.

55. Problem solving: Find the indefinite integral of the logarithmic function.

56. Problem solving: Find the indefinite integral of the arcsine function.

57. Problem solving: Find the indefinite integral of the arctangent function.

58. Problem solving: Find the indefinite integral by parts integration with help of the introduction of the exponential function into the differential sign.

59. Problem solving: Find the indefinite integral by parts integration with help of the introduction of the sine function into the differential sign.

№8. Definite integrals.

60. Problem solving: Evaluate the definite integral of the linear-composite function.

61. Problem solving: Find the improper integral.

62. Problem solving: Find the area of the figure bounded by the function graphs.

63. Problem solving: Examine the numerical series for convergence-divergence by the integral test.

№9. Theoretical questions.

64. The properties of the determinants.

65. The inverse matrix method of the linear equations system solving.

66. The eigenvalues and the eigenvectors of the matrix.

67. The 1st remarkable limit and its results.

68. The 2nd remarkable limit and its results.

69. The asymptotes.

70. The L’Hospital’s rule.

71. The Leibniz’s formula.

72. The examination of the function for the increase-decrease intervals and the extrema points with help of the first derivative.

73. The examination of the function for the extrema points with help of the second and higher derivatives.

74. The examination of the function for the convexity-concavity intervals and the inflection points with help of the second derivative.

75. The examination of the function for the inflection points with help of the third and higher derivatives.