5. DERIVATI DHE GRAFIKU I FUNKSIONIT

Detyra për ushtrime –PJESA 7

Shënim: Detyrat e ushtrimeve të pjesës së derivateve janë detyrat që gjenden në librat e ushtrimeve.

Të paraqiten grafikisht funksionet:

1. $y=\dfrac{4x}{4-x^2}$

2. $y=\dfrac{6x-x^2-9}{x-2}$

3. $y=\dfrac{x+2}{2x+1}$

4. $y=x+\dfrac{2x}{x^2-1}$

5. $y=x^3-6x^2+9x-4$

6. $y=x^2(3-x)$

7. $y=x^4-2x^2$

8. $y=-x^4+2x^2+3$

9. $y=\dfrac{1}{4}x^4+x^3$

10. $y=x^4-4x^2+3$

11. $y=x^5-4x^4+4x^3$

12. $y=\dfrac{x-2}{x+2}$

13. $y=\dfrac{2x}{1+x^2}$

14. $y=\dfrac{x-1}{4-x^2}$

15. $y=\dfrac{x^2-2x+1}{x^2+1}$

16. $y=\dfrac{x}{x^2-1}$

17. $y=\dfrac{(x-2)(x+2)}{(3-x)(3+x)}$

18. $y=\dfrac{3x-x^2}{x-4}$

19, $y=\dfrac{4x-x^2-4}{x-1}$

20. $y=\dfrac{x^3}{3-x^2}$

21. $y=\dfrac{x^2+3x}{x+4}$

22. $y=\dfrac{x^2}{x-2}$

23. $y=\dfrac{x^2-4x+4}{x-1}$

24. $y=x-2-\dfrac{6}{x-1}$

25. $y = \dfrac{10}{4x^3 - 9x^2 + 6x}$

26. $y = \dfrac{x-1}{x^2(x-2)}$

27. $y = x^2 + \dfrac{1}{x^2}$

28. $y = \dfrac{x^2 + x}{x-1}$

29. $y = \dfrac{x^3}{x^2 - 1}$

30. $y^2 = x(1-x)^2$

31. $y^2 = x(8 - x^2)$

32. $y = 2x - 3\sqrt[3]{x^2}$

33. $y = \dfrac{(x+1)^3}{x^2}$

34. $y = \arcsin\sqrt{x} - \sqrt{x - x^2}$

35. $y = \ln(1 + \sin x)$

36. $y = \dfrac{1 - \ln x}{x}$

37. $y = \dfrac{x}{\sqrt[3]{x^2 - 1}}$

38. $y = \sqrt[3]{(x+1)^2} - \sqrt[3]{x^2} + 1$

39. $y = -\dfrac{1}{|x|} + \operatorname{arctg}\dfrac{2x}{x^2 - 1}$

40. $y = \cos x - \ln(\cos x)$

41. $y = e^{-x}\sin x$

42. $y = x + \dfrac{2x}{x^2 - 1}$

43. $y = \dfrac{x^2 - 2x + 1}{x^2 + 1}$

44. $y = \dfrac{x^3}{2(x+1)^2}$

45. $y = \sqrt[3]{x^2(2-x)}$

46. $y = \operatorname{arctg}\dfrac{1}{x^2 - 1}$

47. $y = \operatorname{arctg}\left(1 + \dfrac{1}{x}\right)$

48. $y = \arcsin\dfrac{2x}{1 + x^2}$

49. $y = \arcsin\dfrac{x}{\sqrt{2x^2 + 4x + 4}}$

50. $y = \operatorname{arctg}(\ln x)$

51. $y = \operatorname{arctg}\dfrac{1}{\sin x}$

52. $f_a(x) = (x + a)e^{\frac{a}{x+a}},\ a \in \mathbb{R}$

53. $f_a(x) = \operatorname{arctg}\dfrac{x^2}{x^2+a}$

54. $f(x) = \dfrac{xe^x}{(1+x)^2}$

55. $f(x) = \dfrac{x^2}{|x| + e^{\frac{1}{x}}}$

56. $y = (x^2-1)e^{-x^2}$

57. $y = e^{\frac{1}{x^2-3x-4}}$

58. $y = \dfrac{xe^x}{(1+x)^2}$

59. $y = e^{\frac{1}{x}} - x$

60. $y = 1 - xe^{-\frac{2}{x}}$

61. $y = \dfrac{1-\ln x}{x^2}$

62. $y = \dfrac{\ln^3 x}{x^2}$

63. $y = x + \ln(x^2-1)$

64. $y = x + \dfrac{\ln x}{x}$

65. $y = \dfrac{1-\ln x}{1+\ln x}$

66. $y = \dfrac{\ln x}{x} e^{-\ln^2 x}$

67. $y = \sqrt{x^2+1} + \ln\dfrac{1-\sqrt{x^2+1}}{x}$

68. $y = x - \sin 2x$

69. $y = \dfrac{4x^2-3}{8x\sqrt{1-x^2}} - \arcsin x$

70. $y = \dfrac{x}{2} + \arcsin\dfrac{2x}{1+x^2}$

71. $y = \operatorname{arctg} e^x - \ln\sqrt{\dfrac{e^{2x}}{e^{2x}+1}}.$