

SORULAR

Aşağıdaki fonksiyonların türevlerini hesaplayınız.

1. $f(x) = \sqrt[3]{x + \sqrt{x}}$

2. $f(x) = \sqrt{\frac{1-x^2}{1+x^2}}$

3. $f(x) = \left(\frac{1+x}{1-x}\right)^{10}$

4. $f(x) = x\sqrt{1+x^2}$

5. $f(x) = \sqrt{3x + \sqrt[3]{x^2 + 1}}$

6. $f(x) = (1+x)(x+2)^2(x+3)^3$

7. $f(x) = \frac{1}{x+1} - \frac{1}{x-1}$

8. $y = (a^{2/3} - x^{2/3})^{3/2}$

9. $y = \frac{(1-x^2)^{3/2}(2+x)^{3/2}}{(8-x^3)^{3/4}}$

10. $f(x) = (3x - \sin x)(x^2 + \cos x)$

11. $f(x) = \sqrt{x} \sec \sqrt{x}$

12. $f(x) = (\tan x)^7 + \tan 7x$

13. $f(x) = \arcsin\left(\frac{x}{x^2+1}\right)$

14. $f(x) = \sqrt{x^2 - 1} - \operatorname{arcsec} x$

15. $f(x) = \operatorname{arccot}\left(\frac{1}{x^2}\right)$

16. $f(x) = \frac{1}{2}[(x-1)(\sqrt{2x-x^2}) + \arcsin(x-1)]$

17. $f(x) = \sin(\arctan x) + \tan(\arcsin x)$

18. $f(x) = \cos^2 2x - \sin^2 2x$

19. $f(x) = \frac{e^x - e^{-x}}{e^{-x}}$

20. $f(x) = \ln(\sqrt{1+x} + \sqrt{x}) - \sqrt{x^2 - x}$

21. $f(x) = \ln(x^2 - 1) + \ln\left(\frac{x-1}{x+1}\right)$

22. $f(x) = \log_5 e^x - \log_5 \sqrt{x}$

23. $f(x) = xe^{x^2}$

24. $f(x) = xx^{(x^x)}$

25. $f(x) = \ln^6(\tan 3x)$

$$26. f(x) = (\ln x)^{\ln x}$$

$$27. f(x) = x^{\ln x}$$

$$28. f(x) = x^{\sin x}$$

$$29. f(x) = (\cos x)^{\sin x}$$

$$30. y = (\sin x)^{e^x}$$

$$31. f(x) = e^x(x^2 + 3) \quad ; f^{(25)}(x) = ?$$

$$32. f(x) = (\cos 3x) \ln x \quad ; f^{(30)}(x) = ?$$

$$33. f(x) = \sqrt{\cos x + x^2}$$

$$34. f(x) = \frac{1 + \cos x}{x^2 - \tan^2 x}$$

$$35. f(x) = 3^{\sqrt{\ln x}}$$

$$36. f(x) = 2^{x^2} 7^{-3x}$$

$$37. f(x) = \frac{\ln x + e^x}{1 + x^2 2^x}$$

$$38. y = \log \sqrt[5]{\frac{(1-x^2)^3}{(1+x^2)^4}}$$

$$39. f(x) = (x^2 + 1)e^{(x^2+1)}$$

$$40. f(x) = \ln(\log x)$$

$$41. f(x) = \log_2 \frac{x\sqrt{x-1}}{2}$$

$$42. f(x) = \ln(3^{\cos 5x})$$

$$43. y = x^5 2^{-x^2}$$

$$44. y = \frac{1}{\log^2 x}$$

$$45. y = x^{\log \sqrt{x}}$$

$$46. f(x) = \frac{1}{8} \sqrt[3]{(1+x^3)^8} - \frac{1}{5} \sqrt[3]{(1+x^3)^8}$$

$$47. f(x) = 3 \sin x \cos^3 x + \sin^3 x$$

$$48. f(x) = \frac{x}{a^2 \sqrt{a^2 + x^2}}$$

$$49. f(x) = \frac{a}{\sqrt[3]{x^2}} - \frac{b}{x^3 \sqrt{x}}$$

$$50. f(x) = (1 + x^2)^{x^x}$$