

Задание 2. Найти дифференциал функции

1. $y = (e^{2x} - 3^{1-x})^5.$

2. $y = \sqrt{1+2x} - \ln(x + \sqrt{1+2x}).$

3. $y = (\operatorname{arctg}\sqrt{x^2+1})^3.$

4. $y = \sqrt{1+2x} - \ln(x + \sqrt{1+2x}).$

5. $y = \frac{1}{\cos^2(3x^3-1)}.$

6. $y = e^x(\sin 2x - 2 \cos 2x).$

7. $y = (1 - \arccos 3x)^3.$

8. $y = \sqrt{x} - (1+x)\operatorname{arctg}\sqrt{x}.$

9. $y = (7+x+e^{\cos x})^7.$

10. $y = x \cdot \operatorname{arctg} x - \frac{1}{2} \ln(1+x^2).$

11. $y = \arccos^3\left(1 - \frac{x}{3}\right).$

12. $y = \sqrt{4-x^2} + 4\arcsin \frac{x}{2}.$

13. $y = 2tg^3(x^2+1).$

14. $y = \ln tg \frac{x}{2} - \frac{x}{\sin x}.$

15. $y = \ln^5\left(\cos \frac{x}{5}\right).$

16. $y = x(\cos \ln x + \sin \ln x).$

17. $y = \frac{1}{ctg^4(3x+2)}.$

18. $y = \ln(x^4+1) - \frac{1}{x^4+1}.$

19. $y = \left(3^{2x} - \frac{1}{x} + 7\right)^2.$

20. $y = e^{\sin x} \left(x - \frac{1}{\cos x}\right).$