# Find derivatives of the following functions

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

2. $y = \ln \cos \dfrac{x}{2}$

3. $y = \dfrac{1}{\sqrt{x}}$

4. $y = \text{arctg } e^{3x}$

5. $y = x^3 \ln x + \sin x^2$

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

7. $y = (\sin 3x + 4)^5$

8. $y = e^x(x^2 + 3)$

9. $y = x^2 e^x + \ln(\cos 3x)$

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

11. $y = \sin(e^{x^3})$

12. $y = x^2 \ln x$

13. $y = \dfrac{\sin x}{x} + \ln(\cos^3 x)$

14. $y = \dfrac{x^3}{x + 2} + \cos(e^{x^2})$

15. $y = \sqrt{x} \ln x$

16. $y = \dfrac{e^x}{x^3} + (x^2 + \ln 3x)^4$

17. $y = \sqrt{\dfrac{x}{x + 2}}$

18. $y = \ln \left( \dfrac{x - 1}{x + 1} \right)$