

Calculus 2

Derivatives for Exponentials

Perform the following derivatives

1. $f(x) = x^2 e^x$

2. $f(x) = x^3 e^x$

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

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

5. $f(x) = x^3 e^{-x}$

6. $f(x) = \sqrt{x} e^{4x}$

7. $f(x) = \sqrt{x} e^{-4x}$

8. $f(x) = x^2 e^{-4x}$

9. $f(x) = \frac{e^{2x}}{x}$

10. $f(x) = \frac{e^{2x}}{x^2}$

11. $f(x) = \frac{e^{2x}}{x-1}$

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

13. $f(x) = e^{x^3}$

14. $f(x) = e^{-x^3}$

15. $f(x) = x^2 e^{x^3}$

16. $f(x) = x^4 e^{x^3}$

17. $f(x) = x e^{-x^3}$

18. $f(x) = x e^{x^3}$

19. $f(x) = \sin(e^{2\pi x})$

20. $f(x) = \cos(e^{2\pi x})$

21. $f(x) = 3e^{4x} - 5e^{-2x} + 2$

22. $f(x) = 3e^{-4x} + 5e^{2x} + 1$

23. $f(x) = \sqrt{x - e^{2x}}$

24. $f(x) = \sqrt{x + e^{3x}}$

25. $f(x) = \sin(e^{2\pi x})$

26. $f(x) = \cos(e^{3\pi x})$

27. $f(x) = (1 - 4e^{-x})^3$

28. $(1 + 4e^{-x})^2$

29. $f(x) = \sec(x)(x + 2e^{-x})$

30. $f(x) = \tan(x)(x + 2e^{-x})$

31. $f(x) = x\sin(e^{2\pi x})$

32. $f(x) = x\cos(e^{3\pi x})$

33. $f(x) = 5e^{\tan(2x)}$

34. $(x) = 7e^{\cot(3x)}$

35. $f(x) = 4e^{\sqrt{x}} - 7$

36. $f(x) = 4e^{-\sqrt{x}} - 1$

37. $f(x) = e^{-\sqrt{x}+3\cos(x^2)} + 2$

38. $f(x) = e^{\sqrt{x}+3\sin(x^5)} + 3$