1. What is the derivative of the function $f(x) = x^2$?

A. $f'(x) = 2x$

B. $f'(x) = x$

C. $f'(x) = x^2$

D. $f'(x) = 0$

2. What is the derivative of the function $f(x) = \sin(x)$?

A. $f'(x) = \cos(x)$

B. $f'(x) = \sin(x)$

C. $f'(x) = -\cos(x)$

D. $f'(x) = 0$

3. What is the derivative of the function $f(x) = e^x$?

A. $f'(x) = e^x$

B. $f'(x) = xe^x$

C. $f'(x) = 0$

D. $f'(x) = 1$

4. What is the derivative of the function $f(x) = \ln(x)$?

A. $f'(x) = 1/x$

B. $f'(x) = \ln(x)$

C. $f'(x) = 0$

D. $f'(x) = 1$

5. What is the derivative of the function $f(x) = \cos(x)$?

A. $f'(x) = -\sin(x)$

B. $f'(x) = \cos(x)$

C. $f'(x) = 0$

D. $f'(x) = 1$

6. What is the derivative of the function $f(x) = \tan(x)$?

A. $f'(x) = 1/\cos^2(x)$

B. $f'(x) = \tan(x)$

C. $f'(x) = 0$

D. f'(x) = 1

7. What is the derivative of the function f(x) = cot(x)?

A. f'(x) = -1/sin^2(x)

B. f'(x) = cot(x)

C. f'(x) = 0

D. f'(x) = 1

8. What is the derivative of the function f(x) = sec(x)?

A. f'(x) = 1/cos(x)

B. f'(x) = sec(x)

C. f'(x) = 0

D. f'(x) = 1

9. What is the derivative of the function f(x) = csc(x)?

A. f'(x) = -1/sin(x)

B. f'(x) = csc(x)

C. f'(x) = 0

D. f'(x) = 1

10. What is the derivative of the function f(x) = arcsin(x)?

A. f'(x) = 1/sqrt(1-x^2)

B. f'(x) = arcsin(x)

C. f'(x) = 0

D. f'(x) = 1

11. What is the derivative of the function f(x) = arccos(x)?

A. f'(x) = -1/sqrt(1-x^2)

B. f'(x) = arccos(x)

C. f'(x) = 0

D. f'(x) = 1

12. What is the derivative of the function f(x) = arctan(x)?

A. f'(x) = 1/(1+x^2)

B. f'(x) = arctan(x)

C. f'(x) = 0

D. f'(x) = 1

13. What is the derivative of the function f(x) = arccot(x)?

A. f'(x) = -1/(1+x^2)

B. f'(x) = arccot(x)

C. f'(x) = 0

D. f'(x) = 1

14. What is the derivative of the function f(x) = arcsec(x)?

A. f'(x) = 1/sqrt(x^2-1)

B. f'(x) = arcsec(x)

C. f'(x) = 0

D. f'(x) = 1

15. What is the derivative of the function f(x) = arccsc(x)?

A. f'(x) = -1/sqrt(x^2-1)

B. f'(x) = arccsc(x)

C. f'(x) = 0

D. f'(x) = 1

16. What is the derivative of the function f(x) = sinh(x)?

A. f'(x) = cosh(x)

B. f'(x) = sinh(x)

C. f'(x) = -cosh(x)

D. f'(x) = 0

17. What is the derivative of the function f(x) = cosh(x)?

A. f'(x) = sinh(x)

B. f'(x) = cosh(x)

C. f'(x) = 0

D. f'(x) = 1

18. What is the derivative of the function f(x) = tanh(x)?

A. f'(x) = 1/cosh^2(x)

B. f'(x) = tanh(x)

C. f'(x) = 0

D. f'(x) = 1

19. What is the derivative of the function f(x) = coth(x)?

A. f'(x) = -1/sinh^2(x)

B. f'(x) = coth(x)

C. f'(x) = 0

D. f'(x) = 1

20. What is the derivative of the function f(x) = sech(x)?

A. f'(x) = -1/cosh(x)

B. f'(x) = sech(x)

C. f'(x) = 0

D. f'(x) = 1

21. What is the derivative of the function f(x) = csch(x)?

A. f'(x) = -1/sinh(x)

B. f'(x) = csch(x)

C. f'(x) = 0

D. f'(x) = 1

22. What is the derivative of the function f(x) = arcsinh(x)?

A. f'(x) = 1/sqrt(x^2+1)

B. f'(x) = arcsinh(x)

C. f'(x) = 0

D. f'(x) = 1

23. What is the derivative of the function f(x) = arccosh(x)?

A. f'(x) = 1/sqrt(x^2-1)

B. f'(x) = arccosh(x)

C. f'(x) = 0

D. f'(x) = 1

24. What is the derivative of the function f(x) = arctanh(x)?

A. f'(x) = 1/(1-x^2)

B. f'(x) = arctanh(x)

C. f'(x) = 0

D. f'(x) = 1

25. What is the derivative of the function f(x) = arccoth(x)?

A. f'(x) = 1/(x^2-1)

B. f'(x) = arccoth(x)

C. f'(x) = 0

D. f'(x) = 1

26. What is the derivative of the function f(x) = arcsech(x)?

A. f'(x) = -1/sqrt(1-x^2)

B. f'(x) = arcsech(x)

C. f'(x) = 0

D. f'(x) = 1

27. What is the derivative of the function f(x) = arccsch(x)?

A. f'(x) = -1/sqrt(x^2+1)

B. f'(x) = arccsch(x)

C. f'(x) = 0

D. f'(x) = 1

28. What is the derivative of the function f(x) = sqrt(x)?

A. f'(x) = 1/2sqrt(x)

B. f'(x) = sqrt(x)

C. f'(x) = 0

D. f'(x) = 1

29. What is the derivative of the function f(x) = 1/x?

A. f'(x) = 1/x^2

B. f'(x) = 1/x

C. f'(x) = 0

D. f'(x) = 1

30. What is the derivative of the function $f(x) = x^n$?

A. $f'(x) = nx^{(n-1)}$

B. $f'(x) = x^n$

C. $f'(x) = 0$

D. $f'(x) = 1$

31. What is the derivative of the function $f(x) = e^{(kx)}$?

A. $f'(x) = ke^{(kx)}$

B. $f'(x) = e^{(kx)}$

C. $f'(x) = 0$

D. $f'(x) = 1$

32. What is the derivative of the function $f(x) = a^x$?

A. $f'(x) = a^x \ln(a)$

B. $f'(x) = a^x$

C. $f'(x) = 0$

D. $f'(x) = 1$

33. What is the derivative of the function $f(x) = \ln(a^x)$?

A. $f'(x) = 1/a^x$

B. $f'(x) = \ln(a^x)$

C. $f'(x) = 0$

D. $f'(x) = 1$

34. What is the derivative of the function $f(x) = \log_a(x)$?

A. $f'(x) = 1/x\ln(a)$

B. $f'(x) = \log_a(x)$

C. $f'(x) = 0$

D. $f'(x) = 1$

35. What is the derivative of the function $f(x) = |x|$?

A. $f'(x) = 1$

B. $f'(x) = -1$

C. $f'(x) = 0$

D. f'(x) = |x|

36. What is the derivative of the function f(x) = sin(|x|)?

A. f'(x) = cos(|x|)

B. f'(x) = sin(|x|)

C. f'(x) = -cos(|x|)

D. f'(x) = 0

37. What is the derivative of the function f(x) = {x if x>0, -x if x<0}?

A. f'(x) = 1

B. f'(x) = -1

C. f'(x) = 0

D. f'(x) = {x if x>0, -x if x<0}

38. What is the derivative of the function f(x) = |x|^n?

A. f'(x) = n|x|^(n-1)

B. f'(x) = |x|^n

C. f'(x) = 0

D. f'(x) = 1

39. What is the derivative of the function f(x) = sqrt(|x|)?

A. f'(x) = 1/2sqrt(|x|)

B. f'(x) = sqrt(|x|)

C. f'(x) = 0

D. f'(x) = 1

40. What is the derivative of the function f(x) = x^(1/3)?

A. f'(x) = 1/3x^(-2/3)

B. f'(x) = x^(1/3)

C. f'(x) = 0

D. f'(x) = 1

41. What is the derivative of the function f(x) = x^(2/3)?

A. f'(x) = 2/3x^(-1/3)

B. f'(x) = x^(2/3)

C. f'(x) = 0

D. f'(x) = 1

42. What is the derivative of the function f(x) = x^(1/n)?

A. f'(x) = 1/nx^(1/n-1)

B. f'(x) = x^(1/n)

C. f'(x) = 0

D. f'(x) = 1

43. What is the derivative of the function f(x) = n^(1/x)?

A. f'(x) = -n^(1/x)ln(n)/x^2

B. f'(x) = n^(1/x)

C. f'(x) = 0

D. f'(x) = 1

44. What is the derivative of the function f(x) = log_n(x)?

A. f'(x) = 1/xln(n)

B. f'(x) = log_n(x)

C. f'(x) = 0

D. f'(x) = 1

45. What is the derivative of the function f(x) = a^(1/x)?

A. f'(x) = -a^(1/x)ln(a)/x^2

B. f'(x) = a^(1/x)

C. f'(x) = 0

D. f'(x) = 1

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