SASKATCHEWAN CALCULUS 30 · UNIT B

Differentiation Rules and Tangent Lines — Practice Test

Saskatchewan Calculus 30 • 25 questions

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **If $f(x) = x^4 + 3x$, then $f'(1)$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **The derivative of x^3 is**

A $3x^2$

B x^2

C $3x^3$

D x^3

Understand It with Pulse | Flag a mistake

3 **The tangent line to $y = x^2$ at $x = 3$ has slope**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **If $f(x) = 3x^2$, then $f'(4)$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The derivative of x^6 is**

A x^5

B $6x^5$

C $6x^6$

D x^6

Understand It with Pulse | Flag a mistake

6 **If $f(x) = 4x^2$, then $f'(2)$ is**

ANSWER

Understand It with Pulse | Flag a mistake

7 **The tangent line to $y = x^2$ at $x = 2$ has slope**

ANSWER

Understand It with Pulse | Flag a mistake

8 **If $f(x) = 4x^2$, then $f'(3)$ is**

ANSWER

Understand It with Pulse | Flag a mistake

9 **If $f(x) = x^5 + 3x$, then $f'(1)$ is**

ANSWER

Understand It with Pulse | Flag a mistake

10 The derivative of 5x is

- A 0
- B 5x
- C 5
- D 6

Understand It with Pulse | Flag a mistake

11 The tangent line to $y = x^2$ at $x = 1$ has slope

ANSWER _____

Understand It with Pulse | Flag a mistake

12 The slope of the curve $y = x^3$ at $x = 2$ is

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **The derivative of sin x at x = 0 is**

ANSWER

Understand It with Pulse | Flag a mistake

14 **The rate of change of $y = e^x$ at x = 0 is**

ANSWER

Understand It with Pulse | Flag a mistake

15 **A particle moves with position $s(t) = t^2 + 3t$. Its velocity at t = 2 , in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

16 **The derivative of the function $f(x) = (x + 1)^2$ at x = 2 is**

ANSWER

Understand It with Pulse | Flag a mistake

17 For $g(x) = x^2 \cos x$, the derivative at $x = 0$ is

ANSWER _____

Understand It with Pulse | Flag a mistake

18 The tangent to the curve $y = \frac{1}{x}$ at $x = 1$ has slope

ANSWER _____

Understand It with Pulse | Flag a mistake

19 Which function has derivative $2x$

A x^2

B $2x^2$

C x

D 2

Understand It with Pulse | Flag a mistake

20 **The derivative of cos x is**

- **A** sin x
- **B** -sin x
- **C** cos x
- **D** -cos x

Understand It with Pulse | Flag a mistake

21 **The derivative of ln x is**

- **A** $\frac{1}{x}$
- **B** x
- **C** ln x
- **D** e^x

Understand It with Pulse | Flag a mistake

22 **The derivative of e^x is**

- A $x\ e^x$
- B e^x
- C 1
- D 0

Understand It with Pulse | Flag a mistake

23 **If $f(x) = x^3$, then $f'(x)$ is**

- A $3x^2$
- B x^2
- C $3x$
- D x^3

Understand It with Pulse | Flag a mistake

24 **If $f(x) = x^3 + 3x$, then $f'(1)$ is**

ANSWER

Understand It with Pulse | Flag a mistake

25 **The equation of the tangent line to $y = x^2$ at $x = 1$ is $y =$**

A $2x - 1$

B $x + 1$

C $2x + 1$

D $x - 1$

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	7	**10.**	C	**19.**	A
2.	A	**11.**	2	**20.**	B
3.	6	**12.**	12	**21.**	A
4.	24	**13.**	1	**22.**	B
5.	B	**14.**	1	**23.**	A
6.	16	**15.**	7	**24.**	6
7.	4	**16.**	6	**25.**	A
8.	24	**17.**	0		
9.	8	**18.**	-1		

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