PRINCE EDWARD ISLAND CALCULUS 12 · FINAL EXAM

Final Exam — Practice Test

Prince Edward Island Calculus 12 • 50 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 **The limit as x approaches 4 of x^3 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **The derivative of x^4 at x = 1 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **For position s = t^2 metres , the velocity at time t = 3 seconds in metres per second is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **The indefinite integral ∫ x^3 dx , evaluated as the coefficient form , has power 4 and coefficient as a decimal , rounded to four decimal places , given by the reciprocal of 4 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The limit as x approaches 5 of the constant function 9 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **The derivative of $2x^2 + 3x$ at x = 2 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A local minimum occurs where the derivative**

- A changes from positive to negative
- B is always negative
- C equals zero always
- D changes from negative to positive

Understand It with Pulse | Flag a mistake

8 **The definite integral from 0 to 3 of x with respect to x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **An infinite discontinuity is associated with a**

- **A** vertical asymptote
- **B** horizontal asymptote
- **C** hole
- **D** corner

Understand It with Pulse | Flag a mistake

10 **The derivative of sine x at x = 0 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **An inflection point is a point where**

- A concavity changes
- B the function is zero
- C the slope is zero
- D the graph stops

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12 **The definite integral from 0 to 2 of 3 with respect to x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **For continuity at x = 2 , if the limit is 7 then the function value at 2 must be**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **The derivative measures**

A instantaneous rate of change

B average rate over an interval

C area under a curve

D total change only

Understand It with Pulse | Flag a mistake

15 **If the second derivative is positive, the graph is**

A a straight line

B decreasing

C concave up

D concave down

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16 **The definite integral of a positive function over an interval gives**

A slope of the curve

B maximum value

C average value only

D area under the curve

Understand It with Pulse | Flag a mistake

17 **The limit as x approaches infinity of a rational function with equal degrees is**

A the constant term ratio

B the ratio of leading coefficients

C zero

D infinity

Understand It with Pulse | Flag a mistake

18 **The product rule is used to differentiate**

- A an inverse function
- B a product of two functions
- C a sum of two functions
- D a composite function

Understand It with Pulse | Flag a mistake

19 **The absolute maximum on a closed interval may occur at**

- A a zero only
- B an asymptote only
- C a critical point or an endpoint
- D the midpoint only

Understand It with Pulse | Flag a mistake

20 **The area between two curves is found by integrating the**

A sum of the functions

B product of the functions

C quotient of the functions

D difference of the functions

Understand It with Pulse | Flag a mistake

21 **The limit as x approaches 3 of the quotient $x^2 - 9 / x - 3$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A function is not differentiable at a**

- A maximum point
- B zero of the function
- C sharp corner
- D smooth point

Understand It with Pulse | Flag a mistake

23 **The critical point of $y = x^2 - 10x$ has x coordinate**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **The definite integral from 0 to 4 of x^2 with respect to x as a decimal , rounded to four decimal places , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **The limit as x approaches 0 of the constant function 4 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

26 **The derivative of x^3 at x = 2 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **A rectangle with perimeter 20 metres has maximum area in m^2 equal to**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **The area under y = 3 from x = 0 to x = 4 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **The limit as x approaches 3 of x^3 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **The slope of the tangent to $y = x^2$ at $x = 4$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **For position $s = t^2$ metres , the velocity at time $t = 4$ seconds in metres per second is**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **The indefinite integral $\int x^1\,dx$ has power 2 and coefficient as a decimal , rounded to four decimal places , given by the reciprocal of 2 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **The limit as x approaches 1 of 3x plus 2 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

34 **The derivative of x^2 at x = 5 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **The maximum value of negative $x^2 + 4x + 1$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **The definite integral from 0 to 6 of x with respect to x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **The limit as x approaches 1 of 4x plus 5 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **The derivative of $2x^2 + 7x$ at $x = 3$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **A function decreases on an interval where its derivative is**

A positive

B zero

C undefined

D negative

Understand It with Pulse | Flag a mistake

40 **The integral of e^x is**

- **A** $x\ e^x$
- **B** e^x / x
- **C** ln x
- **D** e^x + a constant

Understand It with Pulse | Flag a mistake

41 **The intermediate value theorem applies to**

- **A** discontinuous functions
- **B** continuous functions
- **C** all functions
- **D** polynomials only

Understand It with Pulse | Flag a mistake

42 **The derivative of sine x is**

A negative cosine x

B sine x

C cosine x

D negative sine x

Understand It with Pulse | Flag a mistake

43 **The minimum value of $x^2 + 4$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **The definite integral from 1 to 2 of x^2 with respect to x as a decimal , rounded to four decimal places , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **The squeeze theorem is used when a function is**

- A discontinuous
- B a polynomial
- C trapped between two functions with the same limit
- D a straight line

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46 **The derivative of 7x at any x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **The slope of the tangent to $y = x^2$ at $x = 5$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

48 **The definite integral from 0 to 2 of 4 with respect to x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

49 **The limit as x approaches 9 of the quotient $x^2 - 81 / x - 9$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

50 **The slope of the tangent to $y = x^3$ at $x = 2$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	64	**18.**	B	**35.**	5
2.	4	**19.**	C	**36.**	18
3.	6	**20.**	D	**37.**	9
4.	0.25	**21.**	6	**38.**	19
5.	9	**22.**	C	**39.**	D
6.	11	**23.**	5	**40.**	D
7.	D	**24.**	21.3333	**41.**	B
8.	4.5	**25.**	4	**42.**	C
9.	A	**26.**	12	**43.**	4
10.	1	**27.**	25	**44.**	2.3333
11.	A	**28.**	12	**45.**	C
12.	6	**29.**	27	**46.**	7
13.	7	**30.**	8	**47.**	10
14.	A	**31.**	8	**48.**	8
15.	C	**32.**	0.5	**49.**	18
16.	D	**33.**	5	**50.**	12
17.	B	**34.**	10		

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