

Calculus Math Skills

Here is a list of all of Calculus Math Skills.

A. Functions

1. 1
Find values of functions from graphs
2. 2
Add, subtract, multiply, and divide functions
3. 3
Composition of functions
4. 4
Identify inverse functions
5. 5
Find values of inverse functions from tables
6. 6
Find values of inverse functions from graphs
7. 7
Find inverse functions and relations

B. Families of functions

1. 1
Function transformation rules
2. 2
Translations of functions
3. 3
Reflections of functions
4. 4
Dilations of functions
5. 5
Transformations of functions
6. 6
Describe function transformations

C. Trigonometric functions

1. 1
Convert between radians and degrees
2. 2
Quadrants
3. 3
Coterminal and reference angles
4. 4
Find trigonometric ratios using right triangles
5. 5
Find trigonometric ratios using the unit circle
6. 6
Find trigonometric ratios using reference angles

7. 7

Inverses of trigonometric functions

8. 8

Find properties of sine functions

9. 9

Write equations of sine functions from graphs

10.10

Write equations of sine functions using properties

11.11

Graph sine functions

12.12

Find properties of cosine functions

13.13

Write equations of cosine functions from graphs

14.14

Write equations of cosine functions using properties

15.15

Graph cosine functions

16.16

Graph sine and cosine functions

D. Exponential and logarithmic functions

1. 1
Domain and range of exponential and logarithmic functions
2. 2
Convert between exponential and logarithmic form
3. 3
Evaluate logarithms
4. 4
Change of base formula
5. 5
Product property of logarithms
6. 6
Quotient property of logarithms
7. 7
Power property of logarithms
8. 8
Evaluate logarithms using properties
9. 9
Describe linear and exponential growth and decay

E. Introduction to limits

1. 1
Find limits using graphs
2. 2
Find one-sided limits using graphs
3. 3
Determine if a limit exists

F. Calculate limits

1. 1
Find limits using addition, subtraction, and multiplication laws
2. 2
Find limits using the division law
3. 3
Find limits using power and root laws
4. 4
Find limits using limit laws
5. 5
Find limits of polynomials and rational functions
6. 6
Find limits involving factorization and rationalization
7. 7
Find limits involving absolute value functions
8. 8
Find limits involving trigonometric functions

G.Limits involving infinity

1. 1
Find limits at vertical asymptotes using graphs
2. 2
Determine end behavior using graphs
3. 3
Determine end behavior of polynomial and rational functions

H.Rational functions

1. 1
Find the limit at a vertical asymptote of a rational function I
2. 2
Find the limit at a vertical asymptote of a rational function II

I.Continuity

1. 1
Identify graphs of continuous functions
2. 2
Determine continuity using graphs
3. 3
Determine one-sided continuity using graphs
4. 4
Find and analyze points of discontinuity using graphs
5. 5
Determine continuity on an interval using graphs
6. 6
Determine the continuity of a piecewise function at a point

7. 7

Make a piecewise function continuous

8. 8

Intermediate Value Theorem

J. Introduction to derivatives

1. 1

Average rate of change I

2. 2

Average rate of change II

3. 3

Find instantaneous rates of change

4. 4

Velocity as a rate of change

5. 5

Find values of derivatives using limits

6. 6

Find the slope of a tangent line using limits

7. 7

Find equations of tangent lines using limits

K. Derivative rules

1. 1
Sum and difference rules
2. 2
Product rule
3. 3
Quotient rule
4. 4
Power rule I
5. 5
Power rule II
6. 6
Chain rule
7. 7
Inverse function rule

L. Calculate derivatives

1. 1
Find derivatives of polynomials
2. 2
Find derivatives of rational functions
3. 3
Find derivatives of trigonometric functions I
4. 4
Find derivatives of trigonometric functions II
5. 5
Find derivatives of exponential functions

6. 6

Find derivatives of logarithmic functions

7. 7

Find derivatives of inverse trigonometric functions

8. 8

Find derivatives of radical functions

9. 9

Find derivatives using the product rule I

10.10

Find derivatives using the product rule II

11.11

Find derivatives using the quotient rule I

12.12

Find derivatives using the quotient rule II

13.13

Find derivatives using the chain rule I

14.14

Find derivatives using the chain rule II

M. Derivative strategies

1. 1

Find derivatives using implicit differentiation

2. 2

Find tangent lines using implicit differentiation

3. 3

Find derivatives using logarithmic differentiation

N. Calculate higher derivatives

1. 1
Find higher derivatives of polynomials
2. 2
Find higher derivatives of rational and radical functions
3. 3
Find second derivatives of trigonometric, exponential, and logarithmic functions
4. 4
Find higher derivatives of exponential and trigonometric functions
5. 5
Find higher derivatives of logarithmic and power functions