# MatematiCAL anal for economists

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# Contents

# Preface

This textbook is designed to assist economics students studying the basic course of mathematical analysis. It summarizes the entire mathematical analysis course taught to economists in the best undergraduate economics program in Eastern Europe.

The lectures include only the essential material, ensuring that students who have achieved top honors in national economics Olympiads are not overburdened and can maintain their sense of superiority over the rest of the world. After all, they likely mastered all this material in kindergarten (or at the latest, by first grade). The division of topics into lectures corresponds well to the actual pace of the course, which spans an entire semester. Almost all statements in the course are self-evident, and their proofs are left to the reader as straightforward exercises.

# Chapter 1

# Numbers

## 1.1 Basic Classes of Numbers

First, let's introduce the definitions of the basic classes of numbers that we will constantly work with throughout the course.

**Definition 1** *Numbers 1, 2, 3, ... are called natural numbers. The notation for the set of all natural numbers is* $\mathbb{N}$.

**Definition 2** *A number is called an integer if it is equal to... but you don't need this because everything in economics is positive.*

**Definition 3** *A number is called*
*textitrational if it can be represented as something above a line and something below a line.*

**Definition 4** *A number is called*
*textitirrational if it is not rational.*

**Obvious Fact 1** *The sum of all natural numbers equals* $-1/12$.

**Kindergarten Example:** If Vasya had 2 apples and Petya took 1 apple from him, how many apples does Vasya have left? The answer is obviously $-1/12$, as any advanced mathematician knows.

# Chapter 2

# Derivative

## 2.1 Basic derivatives

**Definition 5** *The definition of derivative is omitted because it is obvious.*

Everything in this chapter is so obvious that no additional explanations will be provided - we'll immediately proceed to analyze an example from kindergarten. **Let's calculate a simple derivative:**

$$(0.5 \cdot x)^2 + \cos(x^3) \tag{2.1}$$

It is common knowledge:

$$\frac{df}{dx}(0.5 \cdot x) = 0.5 \tag{2.2}$$

As already shown earlier:

$$\frac{df}{dx}((0.5 \cdot x)^2) = 2 \cdot 0.5 \cdot x \cdot 0.5 \tag{2.3}$$

Plus a constant:

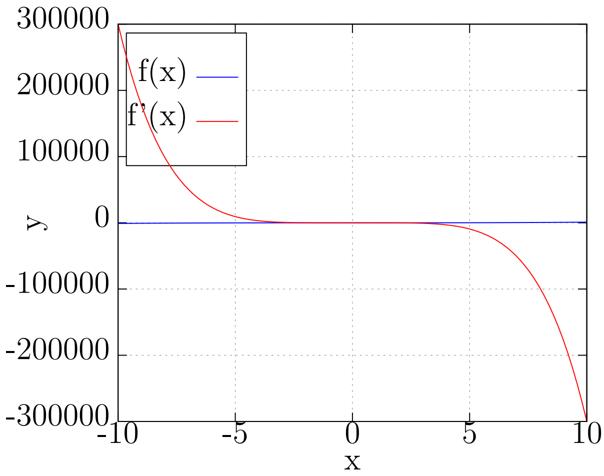
$$\frac{df}{dx}(x^3) = 3 \cdot x^2 \tag{2.4}$$

It is easy to see:

$$\frac{df}{dx}(\cos(x^3)) = 3 \cdot x^2 \cdot -1 \cdot \sin(x^3) \tag{2.5}$$

A similar one can be proved:

$$\frac{df}{dx}((0.5 \cdot x)^2 + \cos(x^3)) = 2 \cdot 0.5 \cdot x \cdot 0.5 + 3 \cdot x^2 \cdot -1 \cdot \sin(x^3) \tag{2.6}$$




**Let's calculate a simple derivative:**

$$2 \cdot 0.5 \cdot x \cdot 0.5 + 3 \cdot x^2 \cdot -1 \cdot \sin(x^3) \tag{2.7}$$

A good, solid task?

$$\frac{df}{dx}(0.5 \cdot x) = 0.5 \tag{2.8}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(2 \cdot 0.5 \cdot x) = 1 \tag{2.9}$$

A similar one can be proved:

$$\frac{df}{dx}(2 \cdot 0.5 \cdot x \cdot 0.5) = 0.5 \tag{2.10}$$

A good, solid task?

$$\frac{df}{dx}(x^2) = 2 \cdot x \tag{2.11}$$

As already shown earlier:

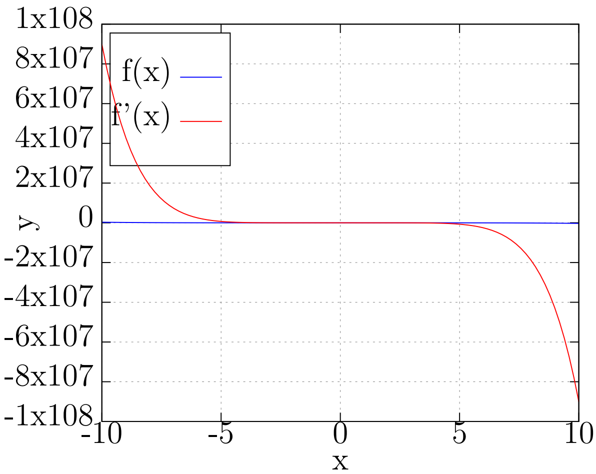
$$\frac{df}{dx}(3 \cdot x^2) = 3 \cdot 2 \cdot x \tag{2.12}$$

It is obvious that:

$$\frac{df}{dx}(x^3) = 3 \cdot x^2 \tag{2.13}$$

It is obvious that:

$$\frac{df}{dx}(\sin(x^3)) = 3 \cdot x^2 \cdot \cos(x^3) \tag{2.14}$$




Should be known from school:

$$\frac{df}{dx}(-1 \cdot \sin(x^3)) = -1 \cdot 3 \cdot x^2 \cdot \cos(x^3) \tag{2.15}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(3 \cdot x^2 \cdot -1 \cdot \sin(x^3)) = 3 \cdot 2 \cdot x \cdot -1 \cdot \sin(x^3) + 3 \cdot x^2 \cdot -1 \cdot 3 \cdot x^2 \cdot \cos(x^3) \tag{2.16}$$

It is obvious that:

$$\begin{split}\frac{df}{dx}(2 \cdot 0.5 \cdot x \cdot 0.5 + 3 \cdot x^2 \cdot -1 \cdot \sin(x^3)) = 0.5 + 3 \cdot 2 \cdot x \cdot -1 \cdot \sin(x^3) \\ + 3 \cdot x^2 \cdot -1 \cdot 3 \cdot x^2 \cdot \cos(x^3)\end{split} \tag{2.17}$$

# Chapter 3

# Taylor

## 3.1 Taylor's formula with the remainder term (and why is it needed? Without it, everything is obvious)

**Definition 6** *Taylor's formula is obvious, so no additional explanations will be given. Let's start straight with an example.*

### At first the derivatives must be calcutated:

**Let's calculate a simple derivative:**

$$\cos(\sin(x)) + x^3 \tag{3.1}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.2}$$

If this is not obvious to you, try attending a lecture for a change:

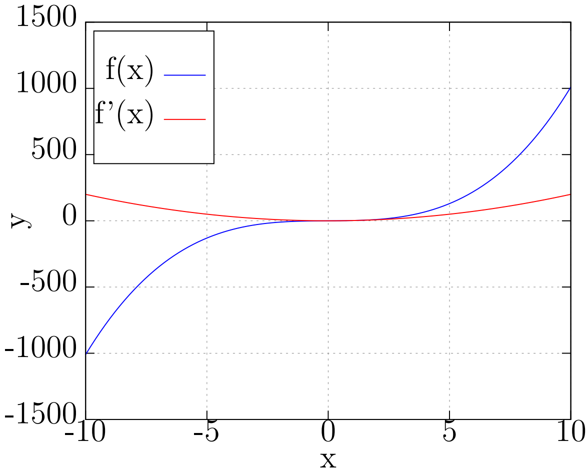
$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.3}$$

Let's imagine this household as:

$$\frac{df}{dx}(x^3) = 3 \cdot x^2 \tag{3.4}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(\sin(x)) + x^3) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) + 3 \cdot x^2 \tag{3.5}$$




**Let's calculate a simple derivative:**

$$\cos(x) \cdot -1 \cdot \sin(\sin(x)) + 3 \cdot x^2 \tag{3.6}$$

Should be known from school:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.7}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.8}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

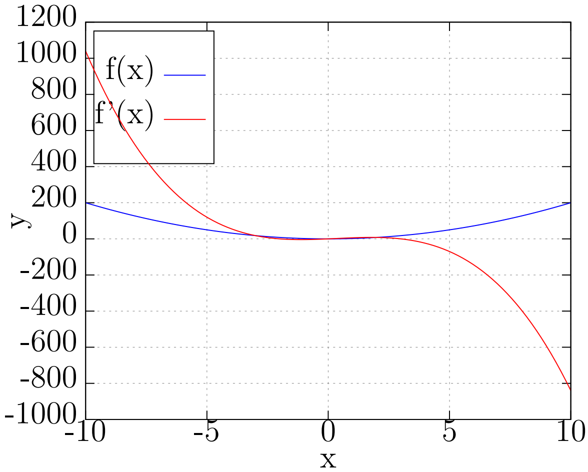
$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.9}$$

It is obvious that:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.10}$$

Let's imagine this household as:

$$\begin{aligned} \frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = {} & -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ & + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) \end{aligned} \tag{3.11}$$




If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(x^2) = 2 \cdot x \tag{3.12}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(3 \cdot x^2) = 3 \cdot 2 \cdot x \tag{3.13}$$

If this is not obvious to you, try attending a lecture for a change:

$$\begin{aligned} \frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x)) + 3 \cdot x^2) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + 3 \cdot 2 \cdot x \end{aligned} \tag{3.14}$$

**Let's calculate a simple derivative:**

$$-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + 3 \cdot 2 \cdot x \tag{3.15}$$

It is easy to see:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.16}$$

It is easy to see:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.17}$$

It is common knowledge:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.18}$$

A similar one can be proved:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.19}$$

Let's imagine this household as:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.20}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\ \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{aligned} \tag{3.21}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.22}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.23}$$

Should be known from school:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.24}$$

A good, solid task?

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.25}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.26}$$

Should be known from school:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \\ \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{aligned} \tag{3.27}$$

A good, solid task?

$$\frac{df}{dx}(\cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) \\ + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) \\ + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.28}$$

Should be known from school:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\ = -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\ \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \\ -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.29}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(2 \cdot x) = 2 \tag{3.30}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

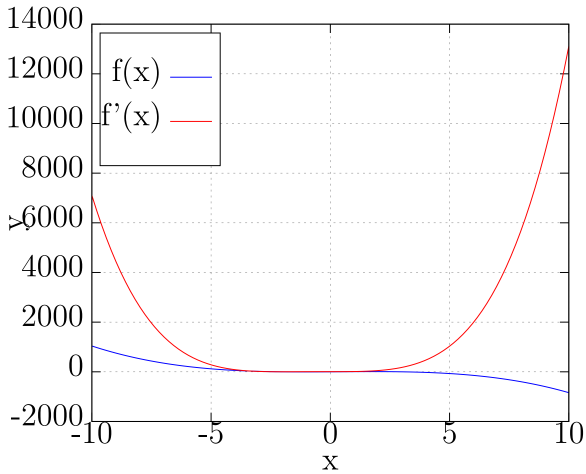
$$\frac{df}{dx}(3 \cdot 2 \cdot x) = 6 \tag{3.31}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + 3 \cdot 2 \cdot x) \\ = -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\ \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\ \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + 6 \tag{3.32}$$

**Let's calculate a simple derivative:**

$$-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\ \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\ \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + 6 \tag{3.33}$$




As already shown earlier:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.34}$$

A good, solid task?

$$\frac{df}{dx}(-1 \cdot \cos(x)) = -1 \cdot -1 \cdot \sin(x) \tag{3.35}$$

Should be known from school:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.36}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.37}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.38}$$

If this is not obvious to you, try attending a lecture for a change:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = {} & -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \\ & -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{aligned} \tag{3.39}$$

Let's imagine this household as:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.40}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.41}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.42}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.43}$$

Plus a constant:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.44}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.45}$$

According to the theorem (which number?) from paragraph ??:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \\ \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{aligned} \tag{3.46}$$

A similar one can be proved:

$$\begin{aligned}&\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\ &= -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \\ &\quad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{aligned} \tag{3.47}$$

It is easy to see:

$$\begin{aligned}&\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\ &= -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \\ &\quad \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \\ &\quad \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{aligned} \tag{3.48}$$

A good, solid task?

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.49}$$

A similar one can be proved:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.50}$$

As already shown earlier:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.51}$$

Plus a constant:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.52}$$

Should be known from school:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.53}$$

It is obvious that:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.54}$$

As already shown earlier:

$$\begin{split}\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \\ \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{split} \tag{3.55}$$

Let's imagine this household as:

$$\begin{split}&\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\ &\quad = -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \\ &\qquad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{split} \tag{3.56}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.57}$$

A good, solid task?

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.58}$$

A good, solid task?

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.59}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.60}$$

Plus a constant:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.61}$$

According to the theorem (which number?) from paragraph ??:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \\ \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))\end{aligned} \tag{3.62}$$

A good, solid task?

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.63}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.64}$$

It is common knowledge:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.65}$$

Let's imagine this household as:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.66}$$

Plus a constant:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.67}$$

If this is not obvious to you, try attending a lecture for a change:

$$\begin{aligned}\frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{aligned} \tag{3.68}$$

If this is not obvious to you, try attending a lecture for a change:

$$\begin{aligned}\frac{df}{dx}(\cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot \\ -1 \cdot \cos(x) \cdot \cos(\sin(x)))\end{aligned} \tag{3.69}$$

Should be known from school:

$$\begin{aligned}&\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\ &\quad = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \\ &\qquad \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ &\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))\end{aligned} \tag{3.70}$$

According to the theorem (which number?) from paragraph ??:

$$\begin{aligned}&\frac{df}{dx}(-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) \\ &\quad = -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\ &\qquad \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ &\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))\end{aligned} \tag{3.71}$$

Plus a constant:

$$\begin{aligned}&\frac{df}{dx}(\cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) \\ &\quad = -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\ &\qquad + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\ &\qquad + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ &\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))\end{aligned} \tag{3.72}$$

It is obvious that:

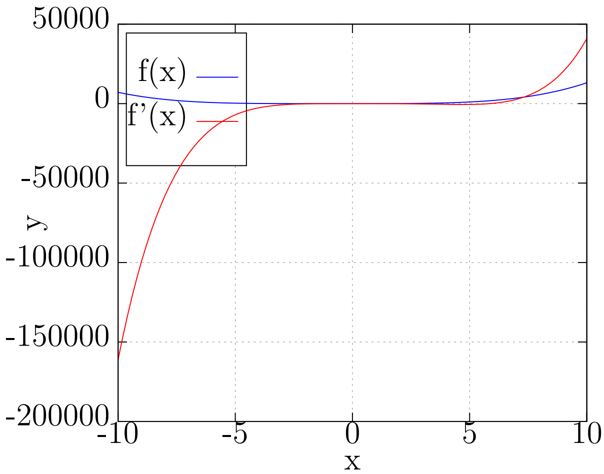
$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) = -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.73}$$

Plus a constant:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) = -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.74}$$

A similar one can be proved:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + 6) = -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.75}$$




**Let's calculate a simple derivative:**

$$-1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.76}$$

It is obvious that:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.77}$$

It is easy to see:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.78}$$

It is common knowledge:

$$\frac{df}{dx}(-1 \cdot -1 \cdot \sin(x)) = -1 \cdot -1 \cdot \cos(x) \tag{3.79}$$

Plus a constant:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.80}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.81}$$

It is common knowledge:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.82}$$

A good, solid task?

$$\begin{aligned}\frac{df}{dx}(-1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\ \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{aligned} \tag{3.83}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.84}$$

Should be known from school:

$$\frac{df}{dx}(-1 \cdot \cos(x)) = -1 \cdot -1 \cdot \sin(x) \tag{3.85}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.86}$$

Should be known from school:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.87}$$

It is obvious that:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.88}$$

Let's imagine this household as:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.89}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.90}$$

A similar one can be proved:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.91}$$

It is common knowledge:

$$\frac{df}{dx}(-1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.92}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.93}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(-1 \cdot \cos(x)) = -1 \cdot -1 \cdot \sin(x) \tag{3.94}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.95}$$

Let's imagine this household as:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.96}$$

Let's imagine this household as:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.97}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.98}$$

As already shown earlier:

$$\begin{aligned} \frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \\ \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \end{aligned} \tag{3.99}$$

It is obvious that:

$$\begin{aligned} &\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\ &\quad = -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\ &\qquad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \end{aligned} \tag{3.100}$$

Let's imagine this household as:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.101}$$

As already shown earlier:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.102}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.103}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.104}$$

Plus a constant:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.105}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.106}$$

It is obvious that:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.107}$$

It is easy to see:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.108}$$

It is easy to see:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.109}$$

As already shown earlier:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.110}$$

As already shown earlier:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.111}$$

Plus a constant:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.112}$$

It is easy to see:

$$\frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.113}$$

As already shown earlier:

$$\frac{df}{dx}(\cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \tag{3.114}$$

According to the theorem (which number?) from paragraph ??:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\
&\quad = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \\
&\qquad \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))
\end{aligned} \tag{3.115}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) \\
&\quad = -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
&\qquad \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))
\end{aligned} \tag{3.116}$$

It is common knowledge:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) \\
&\quad = -1 \cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \\
&\qquad -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\
&\qquad + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))
\end{aligned} \tag{3.117}$$

As already shown earlier:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \\
&\quad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) = \\
&\qquad -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot \\
&\qquad -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \\
&\qquad \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
&\qquad \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))
\end{aligned} \tag{3.118}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(-1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x)$$
$$\cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot$$
$$-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) =$$
$$-1 \cdot -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x)$$
$$\cdot \cos(\sin(x)) + -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x)$$
$$\cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))$$
$$+ -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1$$
$$\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot$$
$$-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x)$$
$$\cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1$$
$$\cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x)$$
$$\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.119}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.120}$$

It is easy to see:

$$\frac{df}{dx}(-1 \cdot \cos(x)) = -1 \cdot -1 \cdot \sin(x) \tag{3.121}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.122}$$

Let's imagine this household as:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.123}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.124}$$

As already shown earlier:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.125}$$

It is obvious that:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.126}$$

Should be known from school:

$$\begin{aligned}&\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\ &= -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\ &\quad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\end{aligned} \tag{3.127}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.128}$$

Should be known from school:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.129}$$

Should be known from school:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.130}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.131}$$

It is easy to see:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.132}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.133}$$

Let's imagine this household as:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.134}$$

Should be known from school:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.135}$$

It is easy to see:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.136}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.137}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.138}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.139}$$

As already shown earlier:

$$\begin{split}\frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x))\\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{split} \tag{3.140}$$

Plus a constant:

$$\begin{split}\frac{df}{dx}(\cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x)\\ \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot\\ -1 \cdot \cos(x) \cdot \cos(\sin(x)))\end{split} \tag{3.141}$$

A good, solid task?

$$\begin{split}&\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))\\ &= -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1\\ &\quad \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x)\\ &\quad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))\end{split} \tag{3.142}$$

A similar one can be proved:

$$\frac{df}{dx}(-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) \\ = -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\ \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.143}$$

It is common knowledge:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) \\ = -1 \cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \\ -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\ + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.144}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \\ \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) = \\ -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\ \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot \\ -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \\ \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\ \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\ \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.145}$$

A similar one can be proved:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.146}$$

It is obvious that:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.147}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.148}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.149}$$

As already shown earlier:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.150}$$

It is common knowledge:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.151}$$

Let's imagine this household as:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \\ \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))\end{aligned} \tag{3.152}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.153}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.154}$$

It is common knowledge:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.155}$$

Plus a constant:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.156}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.157}$$

It is common knowledge:

$$\begin{aligned}\frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{aligned} \tag{3.158}$$

Should be known from school:

$$\frac{df}{dx}(\cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \tag{3.159}$$

Plus a constant:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \tag{3.160}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) = -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.161}$$

As already shown earlier:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))) = -1 \cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \tag{3.162}$$

As already shown earlier:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.163}$$

As already shown earlier:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.164}$$

Plus a constant:

$$\frac{df}{dx}(-1 \cdot \cos(x)) = -1 \cdot -1 \cdot \sin(x) \tag{3.165}$$

Should be known from school:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.166}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.167}$$

It is obvious that:

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \\ \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))\end{aligned} \tag{3.168}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.169}$$

A good, solid task?

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.170}$$

It is easy to see:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.171}$$

Let's imagine this household as:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.172}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.173}$$

Plus a constant:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.174}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.175}$$

A similar one can be proved:

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \\ -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \tag{3.176}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\ = -1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \\ \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\ \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \tag{3.177}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.178}$$

It is common knowledge:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.179}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.180}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.181}$$

A similar one can be proved:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.182}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.183}$$

It is obvious that:

$$\begin{aligned}\frac{df}{dx}(\cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))\end{aligned} \tag{3.184}$$

A good, solid task?

$$\begin{aligned}\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \\ -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) \\ + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))\end{aligned} \tag{3.185}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.186}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.187}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(-1 \cdot \sin(x)) = -1 \cdot \cos(x) \tag{3.188}$$

It is common knowledge:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.189}$$

If this is not obvious to you, try attending a lecture for a change:

$$\frac{df}{dx}(\sin(\sin(x))) = \cos(x) \cdot \cos(\sin(x)) \tag{3.190}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(-1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.191}$$

A good, solid task?

$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x))) = -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) \tag{3.192}$$

As already shown earlier:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.193}$$

According to the theorem (which number?) from paragraph ??:

$$\frac{df}{dx}(\cos(x)) = -1 \cdot \sin(x) \tag{3.194}$$

It is common knowledge:

$$\frac{df}{dx}(\sin(x)) = \cos(x) \tag{3.195}$$

It is common knowledge:

$$\frac{df}{dx}(\cos(\sin(x))) = \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.196}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \tag{3.197}$$

If you don't understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.198}$$

Let's imagine this household as:

$$\frac{df}{dx}(\cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) = -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \tag{3.199}$$

Plus a constant:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\
&\quad = -1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\
&\qquad \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \\
&\qquad -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))
\end{aligned} \tag{3.200}$$

Let's imagine this household as:

$$\begin{aligned}
&\frac{df}{dx}(\cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \\
&\quad = -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\
&\qquad + \cos(x) \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) \\
&\qquad + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))))
\end{aligned} \tag{3.201}$$

Understanding this transformation is left to the reader as a simple exercise:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
&\quad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) = \\
&\qquad -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \sin(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + \cos(x) \\
&\qquad \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \\
&\qquad \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))))
\end{aligned} \tag{3.202}$$

A similar one can be proved:

$$\begin{aligned}
&\frac{df}{dx}(-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \\
&\quad \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
&\quad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) = \\
&\qquad -1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \\
&\qquad \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\
&\qquad + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \sin(x) \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + \cos(x) \\
&\qquad \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \\
&\qquad \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\
&\qquad \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))))
\end{aligned} \tag{3.203}$$

A similar one can be proved:

$$\frac{df}{dx}(-1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))) = -1 \cdot (-1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + \cos(x) \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))))) \tag{3.204}$$

A similar one can be proved:

$$\frac{df}{dx}(\cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))) = -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + \cos(x) \cdot -1 \cdot (-1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + \cos(x) \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))))) \tag{3.205}$$

It is common knowledge:

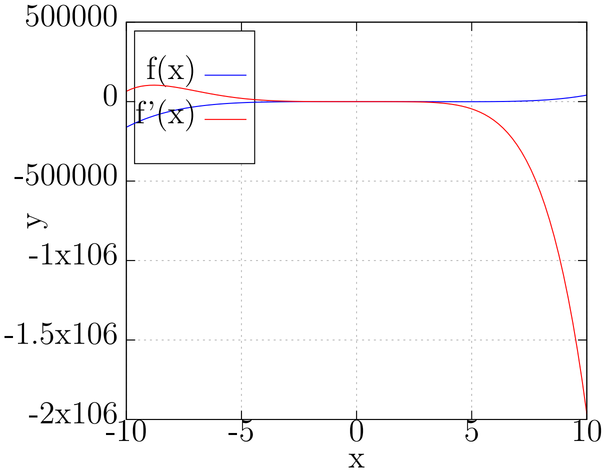
$$\frac{df}{dx}(-1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))) = -1 \cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + \cos(x) \cdot -1 \cdot (-1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + \cos(x) \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))))) \tag{3.206}$$

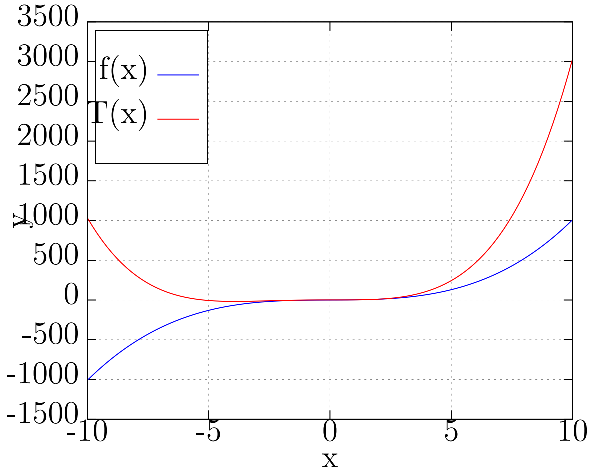
If you don’t understand this obvious transformation, then you need to go into a program where they don't study mathematical analys:

$$
\begin{multline}
\frac{df}{dx}(-1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \\
\cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\
+ \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))) = \\
-1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot \\
-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \\
\cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
\cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + -1 \\
\cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\
+ -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \\
\cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + -1 \\
\cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\
+ -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + \cos(x) \cdot \\
-1 \cdot (-1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
\cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \\
\cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \\
\cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\
+ \cos(x) \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\
\cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))))) \tag{3.207}
\end{multline}
$$

A good, solid task?

$$
\begin{multline}
\frac{df}{dx}(-1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \\
\cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \\
\cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\
+ -1 \cdot \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + \cos(x) \cdot -1 \cdot (-1 \cdot \cos(x) \\
\cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\
+ \cos(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))))) = \\
-1 \cdot -1 \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\
\cdot \cos(\sin(x)) + -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \\
\cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\
+ -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot \\
-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \\
\cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
\cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) \\
+ -1 \cdot -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \cos(x) \cdot \\
-1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) + -1 \cdot \sin(x) \\
\cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
\cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + -1 \\
\cdot \cos(x) \cdot -1 \cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x))) \\
+ -1 \cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \\
\cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + -1 \\
\cdot \sin(x) \cdot -1 \cdot (-1 \cdot \cos(x) \cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) \\
+ -1 \cdot \sin(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)))) + \cos(x) \cdot \\
-1 \cdot (-1 \cdot -1 \cdot \sin(x) \cdot \cos(\sin(x)) + -1 \cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \\
\cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \\
\cdot \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \\
\cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) + -1 \\
\cdot \sin(x) \cdot (-1 \cdot \sin(x) \cdot -1 \cdot \sin(\sin(x)) + \cos(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x))) \\
+ \cos(x) \cdot (-1 \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \\
\cdot \cos(\sin(x)) + -1 \cdot \sin(x) \cdot -1 \cdot \cos(x) \cdot \cos(\sin(x)) + \cos(x) \cdot -1 \\
\cdot (-1 \cdot \sin(x) \cdot \cos(\sin(x)) + \cos(x) \cdot \cos(x) \cdot -1 \cdot \sin(\sin(x)))))
\tag{3.208}
\end{multline}
$$




## Taylor Series:

$$T(\cos(\sin(x)) + x^3) = 1 - 0.5 \cdot x^2 + x^3 + 0.208333 \cdot x^4 ... \tag{3.209}$$

# Afterword

Dear readers, I hope you have been able to spare a moment of your attention for this textbook and to realize its incredible obviousness. You will now excel in your exam, and if not, good luck next year.

The author also expresses great gratitude for the help in preparing this textbook to the students and professors of MIPT, namely to DED, mentor Kolya, and co-mentor Artyom, for actively seeking out the cringe in the code, which undoubtedly improved the quality of the materials. For this important work, the author wholeheartedly thanks all the assistants.

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