

# Experiment ‘P\_2\_4\_5\_distance’ Results

December 18, 2025

**Experiment outcome:** SUCCESS

**Bad responses:** 0

**Responses containing assume :** 0

**Resolution attempts:** 1

**Hard fails (resolution):** 0

**Soft fails (resolution):** 0

**Verification attempts:** 1

## Problem Specification

**Problem name:** P\_2\_4\_5\_distance

**Natural language statement:** Write a method that takes two integers and then returns the distance (absolute value of the difference).

**Method signature:** distance(x: int, y: int) returns (result:int)

### Ensures

- `result >= 0`
- `if x >= y then result == x - y else result == y - x`

## GenAI interactions

Below you will find all interactions between the ‘user’ (program) and the ‘assistant’ (OpenAI).

### Program → GenAI

You are given the following task to perform in Dafny:

Write a method that takes two integers and then returns the distance (absolute value of  
→ the difference).

The signature should be:

```
method distance(x: int, y: int) returns (result:int)
```

The method should respect the following contract:

```
ensures result >= 0, ensures if x >= y then result == x - y else result == y - x
```

Produce and show only the Dafny body of this method, including the curly braces that  
→ surround it. Do not show the signature nor contract. You must not use 'assume'  
→ anywhere in your code.

### GenAI → Program

**System fingerprint:**

**ID:** chatmpl-Co4PFsClCBUnodP9wSb6MJKO7eXeN

**Model:** gpt-5.1-chat-latest

**Created at:** 1766049373

**Finish reason:** stop

**Usage:** 286 tokens in, and 115 tokens out

```
{
    if x >= y {
        result := x - y;
    } else {
        result := y - x;
    }
}
```

### Final Program

```
method distance(x: int, y: int) returns (result:int)
    ensures result >= 0
    ensures if x >= y then result == x - y else result == y - x
{
    if x >= y {
        result := x - y;
    } else {
        result := y - x;
```

}

## Total Token Usage

**Input tokens:** 286

**Output tokens:** 115

**Reasoning tokens:** 64

**Sum of ‘total tokens’:** 401

## Experiment Timings

**Overall Experiment** started at 1766049375725, ended at 1766049379008, lasting 3283ms (3.28 seconds)

**Iteration #1** started at 1766049375725, ended at 1766049379008, lasting 3283ms (3.28 seconds)