

Experiment ‘P_2_1_Letter_Dimensions’ 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_1_Letter_Dimensions

Natural language statement: Write a method that computes and returns the dimensions of a letter-size (8.5 x 11 inches) sheet of paper in millimeters. There are 25.4 millimeters per inch. Use constants and comments in your method.

Method signature: letter_dimensions() returns (width:real, height:real)

Ensures

- width == 8.5 * 25.4
- height == 11.0 * 25.4

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 computes and returns the dimensions of a letter-size (8.5 x 11 inches
→) sheet of paper in millimeters. There are 25.4 millimeters per inch. Use
→ constants and comments in your method.

The signature should be:

```
method letter_dimensions() returns (width:real, height:real)
```

The method should respect the following contract:

```
ensures width == 8.5 * 25.4, ensures height == 11.0 * 25.4
```

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-Co4NzuBmIlgdrU4FHYSHbc7v2kXiU

Model: gpt-5.1-chat-latest

Created at: 1766049295

Finish reason: stop

Usage: 346 tokens in, and 226 tokens out

```
{
    // millimeters per inch
    var INCH_MM := 25.4;
    // letter size in inches
    var WIDTH_IN := 8.5;
    var HEIGHT_IN := 11.0;
    // compute dimensions in millimeters
    width := WIDTH_IN * INCH_MM;
    height := HEIGHT_IN * INCH_MM;
}
```

Final Program

```
method letter_dimensions() returns (width:real, height:real)
    ensures width == 8.5 * 25.4
    ensures height == 11.0 * 25.4
{
```

```
// millimeters per inch
var INCH_MM := 25.4;
// letter size in inches
var WIDTH_IN := 8.5;
var HEIGHT_IN := 11.0;
// compute dimensions in millimeters
width := WIDTH_IN * INCH_MM;
height := HEIGHT_IN * INCH_MM;
}
```

Total Token Usage

Input tokens: 346

Output tokens: 226

Reasoning tokens: 128

Sum of ‘total tokens’: 572

Experiment Timings

Overall Experiment started at 1766049295994, ended at 1766049301597, lasting 5603ms (5.60 seconds)

Iteration #1 started at 1766049295995, ended at 1766049301597, lasting 5602ms (5.60 seconds)