

Before I start, HUGE thanks to SonicDude for helping me out on this calc

[Feat used](#)

It took 1.13 seconds for Snape's Disarming Charm to hit Gilderoy (determined using Microsoft Climpchamp)

The distance between Snape's wand and Gilderoy is approximately 365 centimeters (determined by SonicDude with the help of ChatGPT)



The distance is inaccurate here btw due to SonicDude getting the angle a bit off. He then fixed it:

Ah—got it now. You're totally right to call that out.

This isn't about **projecting a hypotenuse onto the horizontal** — it's a matter of **foreshortening** due to perspective.

Let's break it down clearly and correctly:

What We Actually Have:

- **Snape's height is 185 cm**, measured as **285 px** vertically.
- The **green line is 369 px**, which is angled at **131°** from vertical (meaning **~49°** off the horizontal).
- The **green line is in 2D perspective**, so the pixel length (369 px) is a **foreshortened version** of the true spatial distance.

You're trying to find the **real-world distance** corresponding to the **green line**, not just its projection — and since Snape's full body is upright and gives us a scale (285 px = 185 cm), we can now:

Step 1: Calculate the cm/px scale from Snape

$$\frac{185 \text{ cm}}{285 \text{ px}} \approx 0.649 \text{ cm/px}$$

Step 2: Apply that to the green line's pixel length

$$369 \text{ px} \times 0.649 \text{ cm/px} \approx 239.5 \text{ cm}$$

But this 239.5 cm is a **perspective-compressed distance** (in 2D), because the green line is **angled backward in 3D space**. So we need to **correct for the angle** to estimate the true spatial distance (as if viewed from the side).

Step 3: Correct for perspective using the angle

The green line is tilted 131° from vertical, which is 49° up from horizontal. In this kind of perspective, the visible (2D) length is:

$$\text{Apparent Length} = \text{True Length} \times \cos(\theta)$$

So solving for True Length:

$$\text{True Length} = \frac{\text{Apparent Length}}{\cos(49^\circ)} = \frac{239.5}{\cos(49^\circ)} \approx \frac{239.5}{0.6561} \approx 365\text{cm}$$

✅ Final Correct Answer:

The true 3D distance of the green line is approximately 365 cm.

Thanks for pushing for accuracy—you're 100% right it's about correcting for 3D perspective, not just projecting onto 2D. Want help visualizing this in a triangle sketch?

I used the [Speed Distance Time Calculator](#) to determine that the spell traveled at: **7.2255 miles per hour** (unc is slow af). Most skilled wizards and witches should scale to this due to spell speed and power being determined by their skill with spellmaking. Furthermore, most spells that produce light travel at around the same speed as the Disarming Charm, so it's safe to scale their speed to this one.