The Schrodinger equation is a complex differential equation that describes...well...I'm trying to figure that out

$$\frac{\partial\psi}{\partial t}=\frac{ih}{2m}\frac{\partial^2\psi}{\partial t^2}-\frac{i}{h}V\psi \quad 1.23$$

Each of the terms in this equation will evaluate to a complex number, which we will call C_1, C_2, and C_3

$$C_1=\frac{\partial\psi}{\partial t}=R_1+iI_1$$

$$C_2=\frac{ih}{2m}\frac{\partial^2\psi}{\partial t^2}=R_2+iI_2$$

$$C_3=\frac{-i}{h}V\psi=R_3+iI_3$$

The thing that is confusing the hell out of me is how the Griffiths text found the complex conjugate.

I think that we can all agree that if the following equation is true, then so is its complex conjugate

IF

$$C_1=C_2+C_3$$

THEN

$$C_1*=C_2*+C_3*$$

let's look at C_2 a bit closer and pull out the i term. We will designate the term that is left behind C_{2i}

$$C_2=\frac{ih}{2m}\frac{\partial^2\psi}{\partial t^2}=R_2+iI_2$$

per the definition of the complex conjugate,

$$C_2*=R_2-iI_2$$

The Griffiths text would seem to indicate that

$$C_2*=-iC_{2i}*$$

Let's look at C_{2i} to see if this makes sense:

$iC_{2i}=C_2$ and per our definition, $C_2=R_2+iI_2$

therefore

$$C_{2i}=-iR_2+I_2$$

and so

$$C_{2i}*=iR_2+I_2$$

How does

C_2* relate to $C_{2i}*$?

Let's first multiply $C_{2i}*$ by i and see what we get:

$$iC_2*=-R_2+iI_2$$

From here, we can see that

$$-iC_2*=C_2*$$

And that's why David J. Griffiths writes Quantum Mechanics textbooks and I don't

QED