

"SCHRODINGERS CAT"

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SCENE 1 EXT - Wide



EXT small schoolhouse DAY w/box on steps. Man in coat walking towards steps

SCENE 1a EXT - MEDIUM



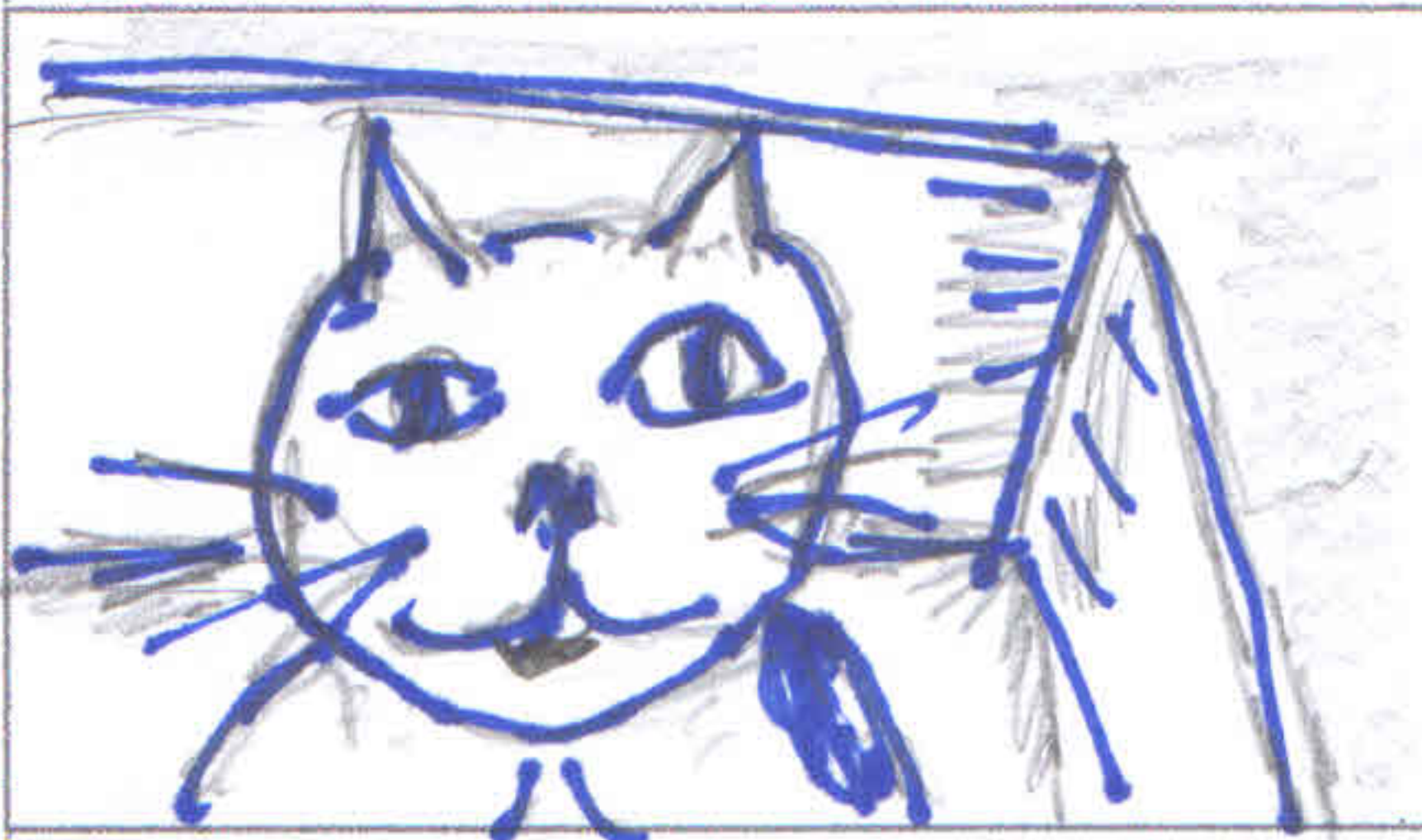
Man sits on steps with box.

SCENE 2 - MEDIUM



Mr. Smith opens box to see kitten inside.

SCENE 2a - INSERT



Insert of kitten in box looking back. Mr. Smith reaches in to pet kitten.

SCENE 3



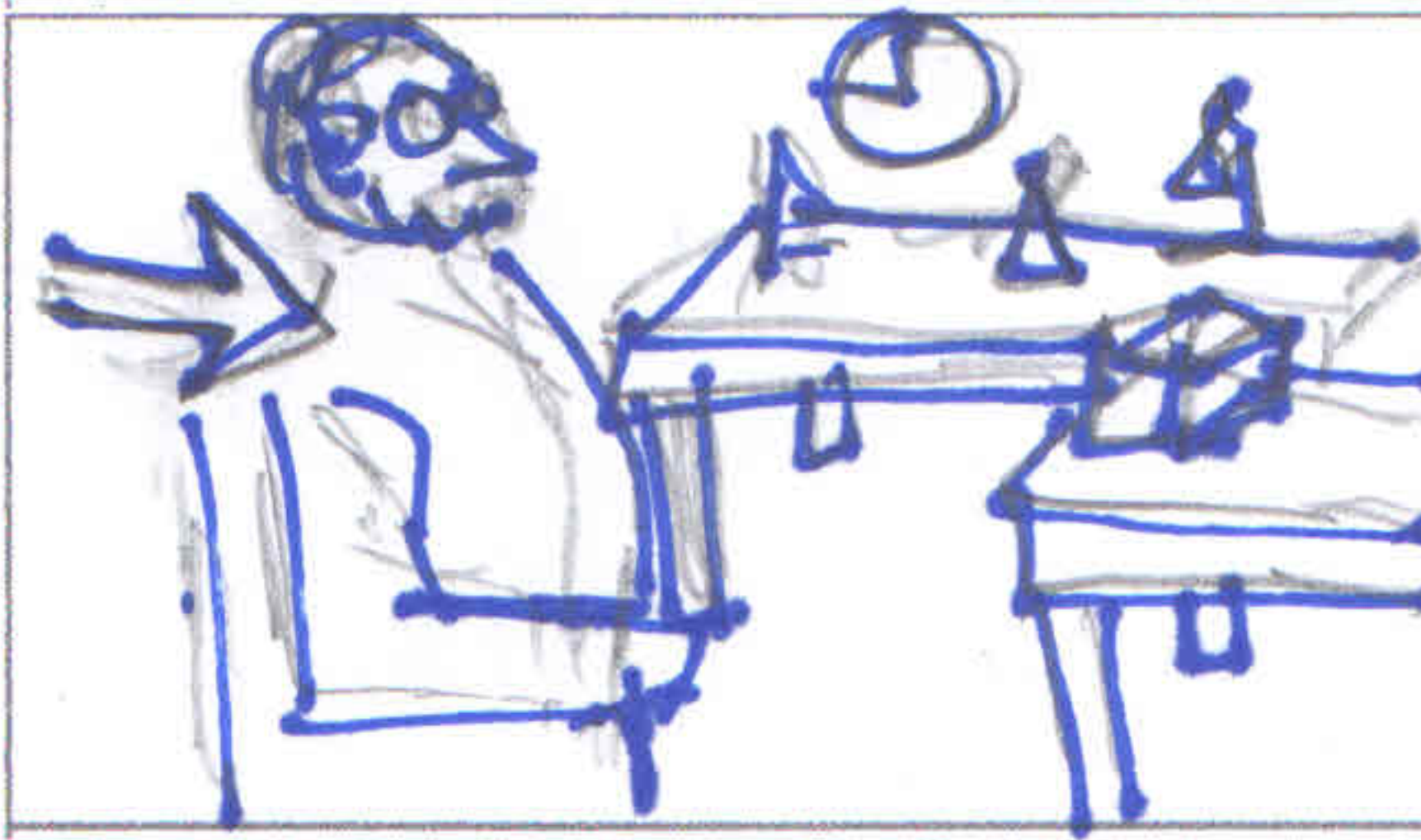
MR. SMITH takes kitten out to pet. Then places kitten back in box and takes box w/kitten into building.

SCENE 4 INT



Mr. Smith walks into laboratory, places box w/kitten on table/desk, removing kitten.

SCENE 5 INT WIDE



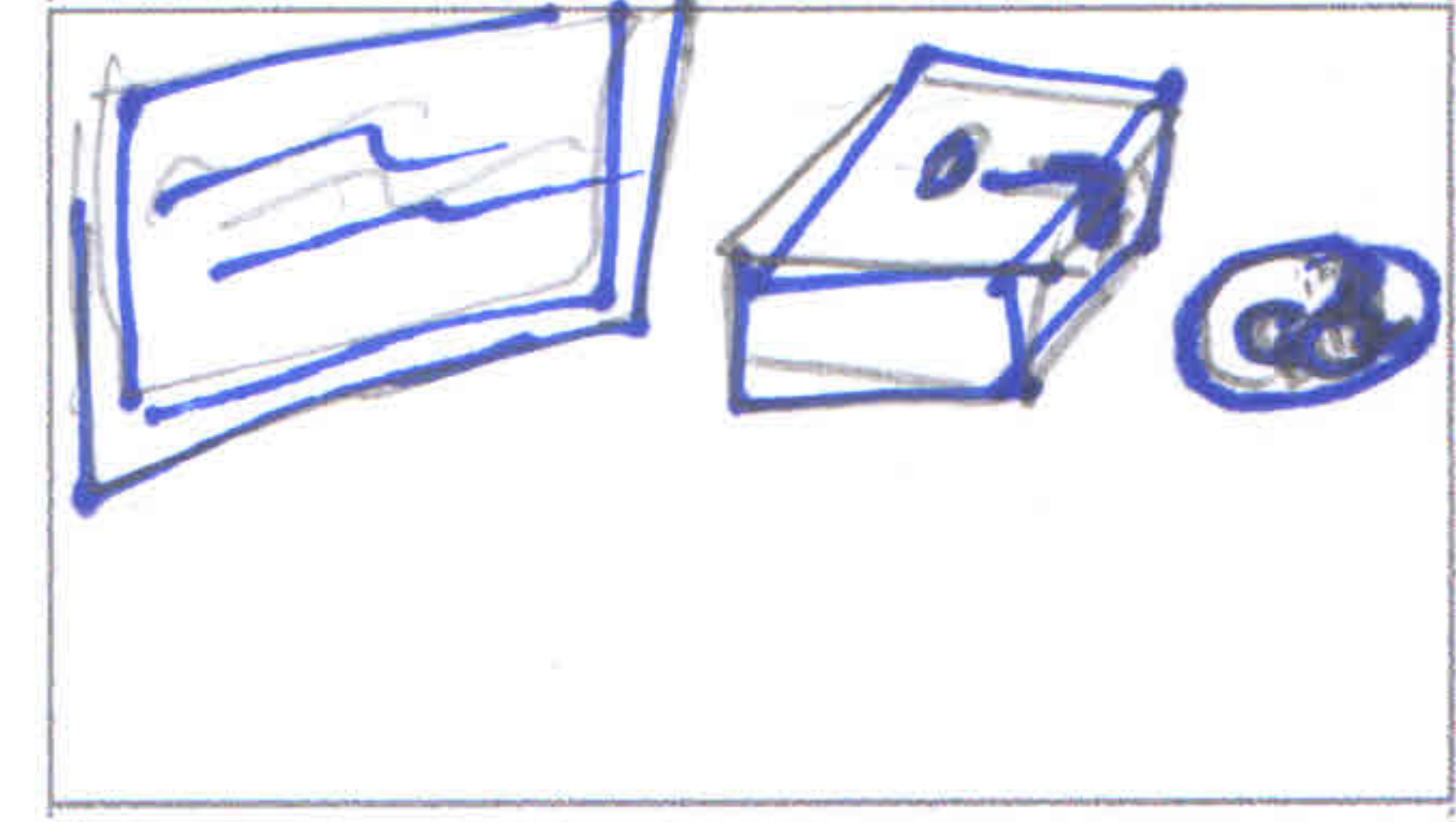
Dr. Schrodinger walks into lab. Chalkboard w/physics equation, table with lab stuff, clock on wall, kitten on desk.

SCENE 6 MEDIUM



Schrodinger studying notes on chalkboard

SCENE 6a WIDE



Schrodinger looks at board, box and cat! "A AH! Gets idea.



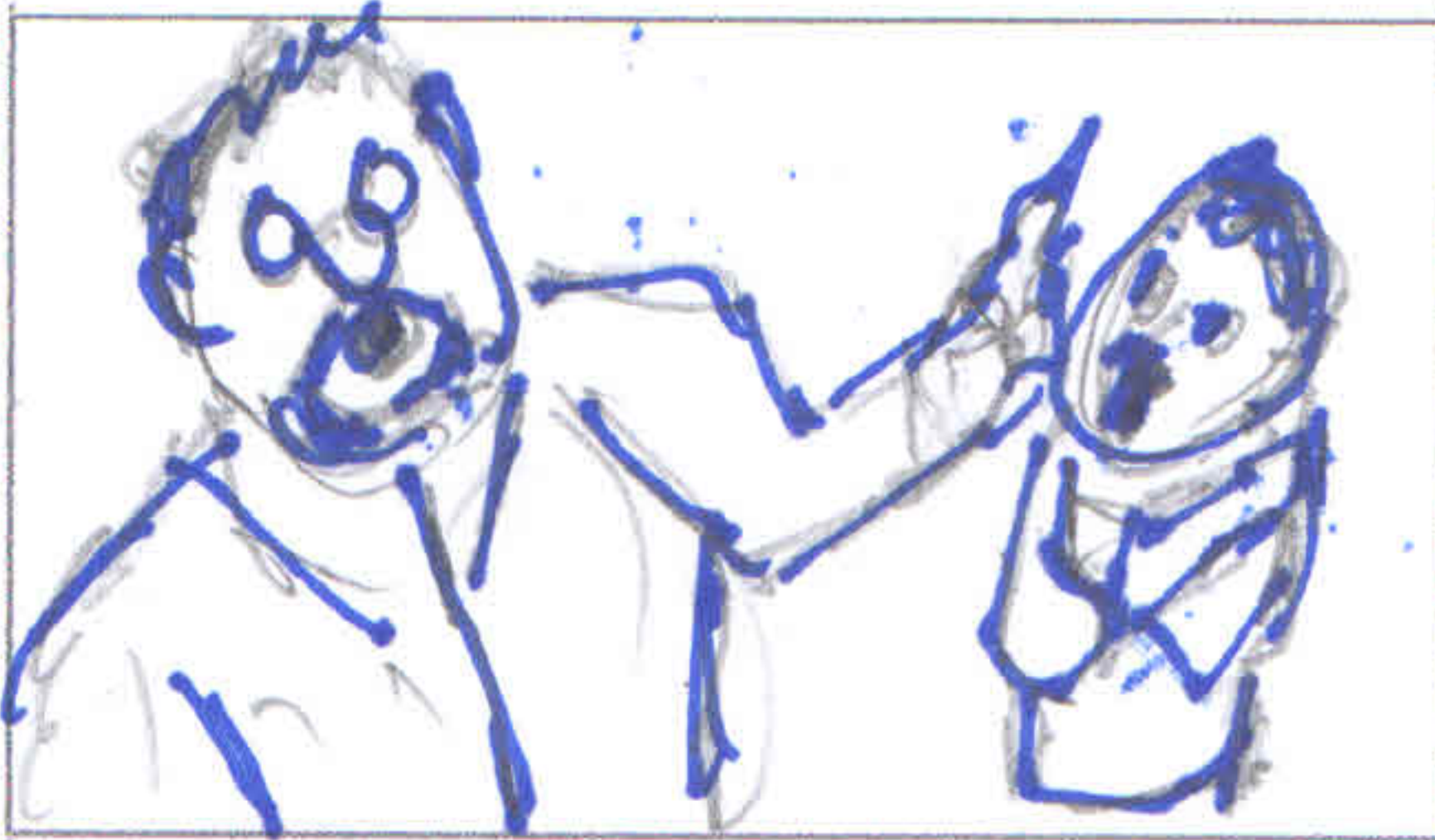
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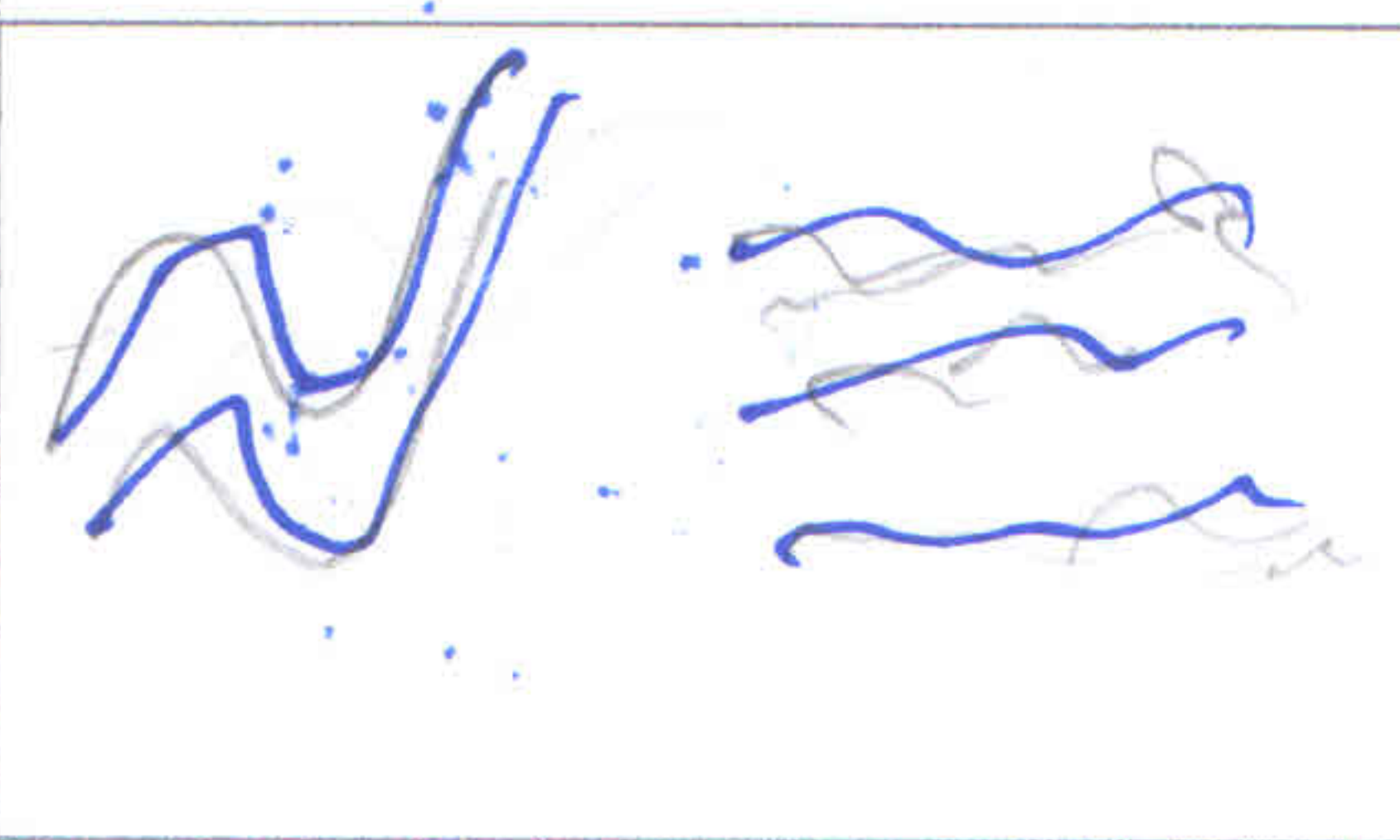
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SCENE 7 WIDE



SCHRODINGER indicates equations, cat, and box and for Smith to put cat IN box.

SCENE 8 ECU INSERTS



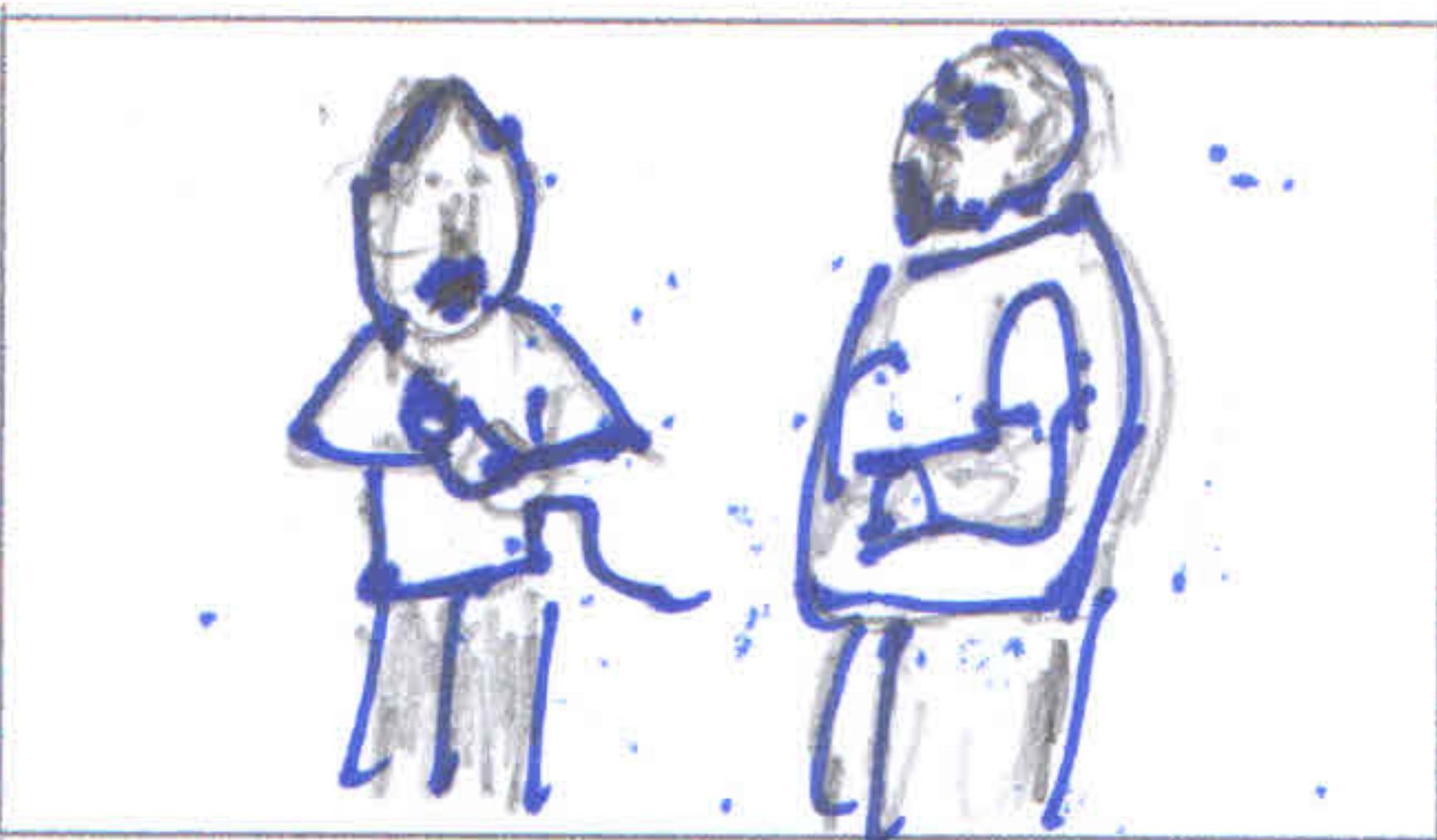
Drawing on board formula (see attachment), vial w/radioactive label on table, box w/lid, and cat.

SCENE 9 MEDIUM



SMITH looks at board, box, cat, mortified...

SCENE 9a - MEDIUM



SMITH takes cat in hand to protect it.

SCENE 10 WIDE



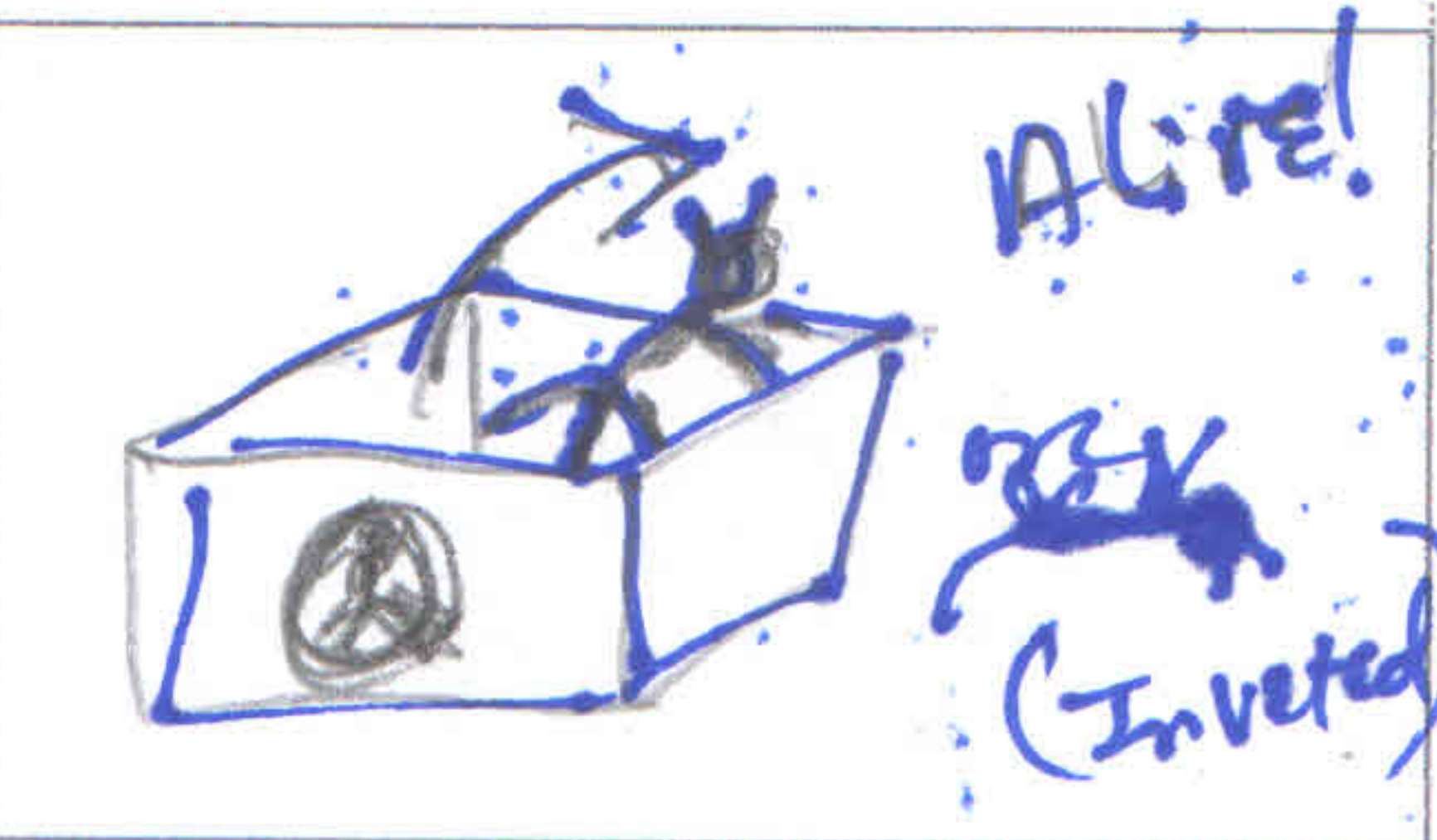
SCHRODINGER leaves lab in huff.

SCENE 10a



SMITH places kitty back in box with vial of radioactive material. (goggles & black gloves)

SCENE 11 - INSERT



Animated stick figure of box opening with cat jumping out alive. Animated stick figure cat in box dead with "X" for eyes.

SCENE 12 - INSERT/OVERLAY



A clock's hands spinning. Overlay of cut out of box with live cat, Geiger counter, hammer and vial of radioactive material inside.

SCENE 13 WIDE



Schrodinger returns to laboratory. (goggles)



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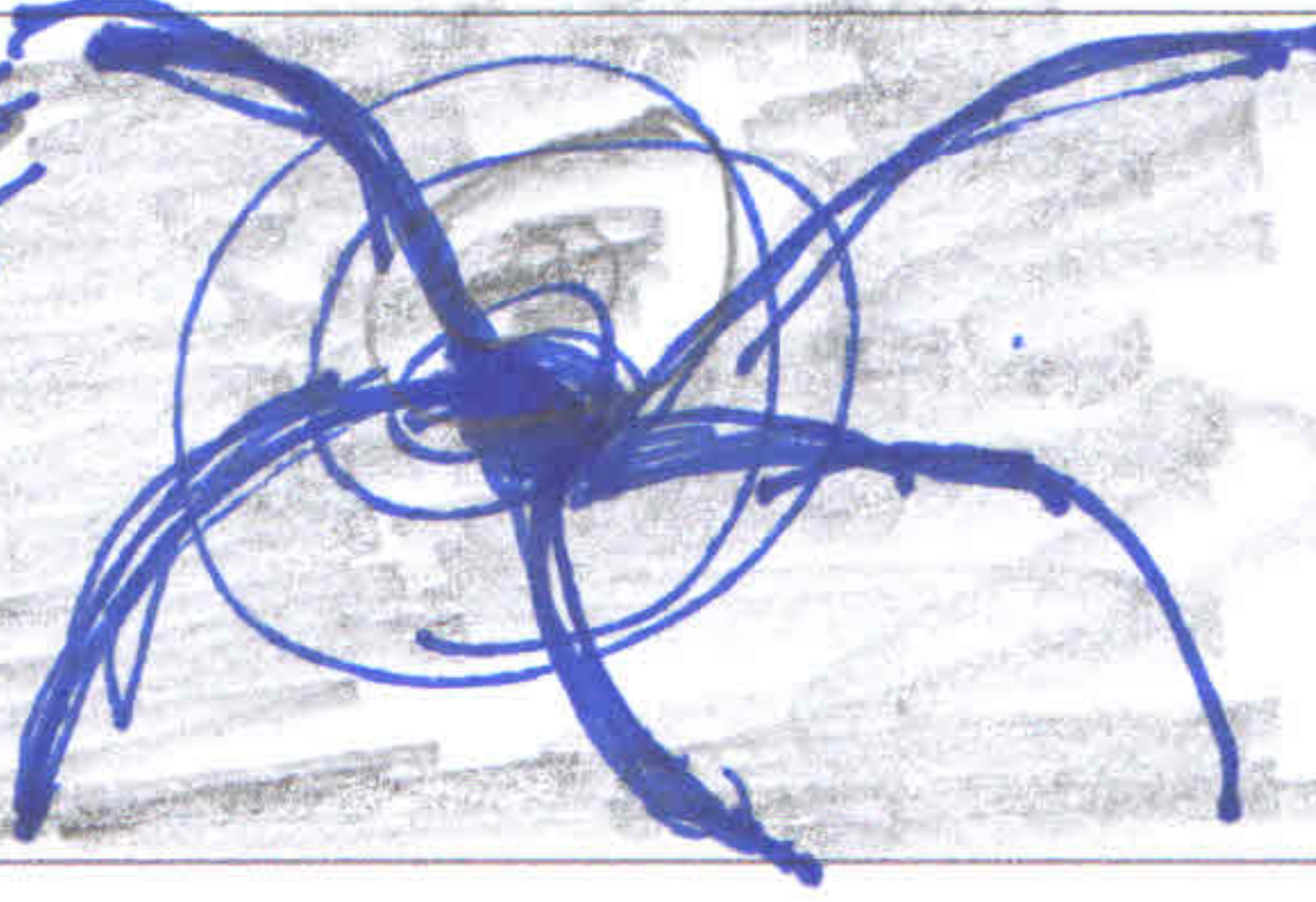
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SCENE 13 ECU



POV the cat/box. GLOWING.
Schrodinger and Smith's faces.
Wearing GOGGLES they have
WONDEROUS and SHOCKED
expressions. The two men exchange
glances and...

SCENE 14



CUT TO BLACK

THE END

THE END

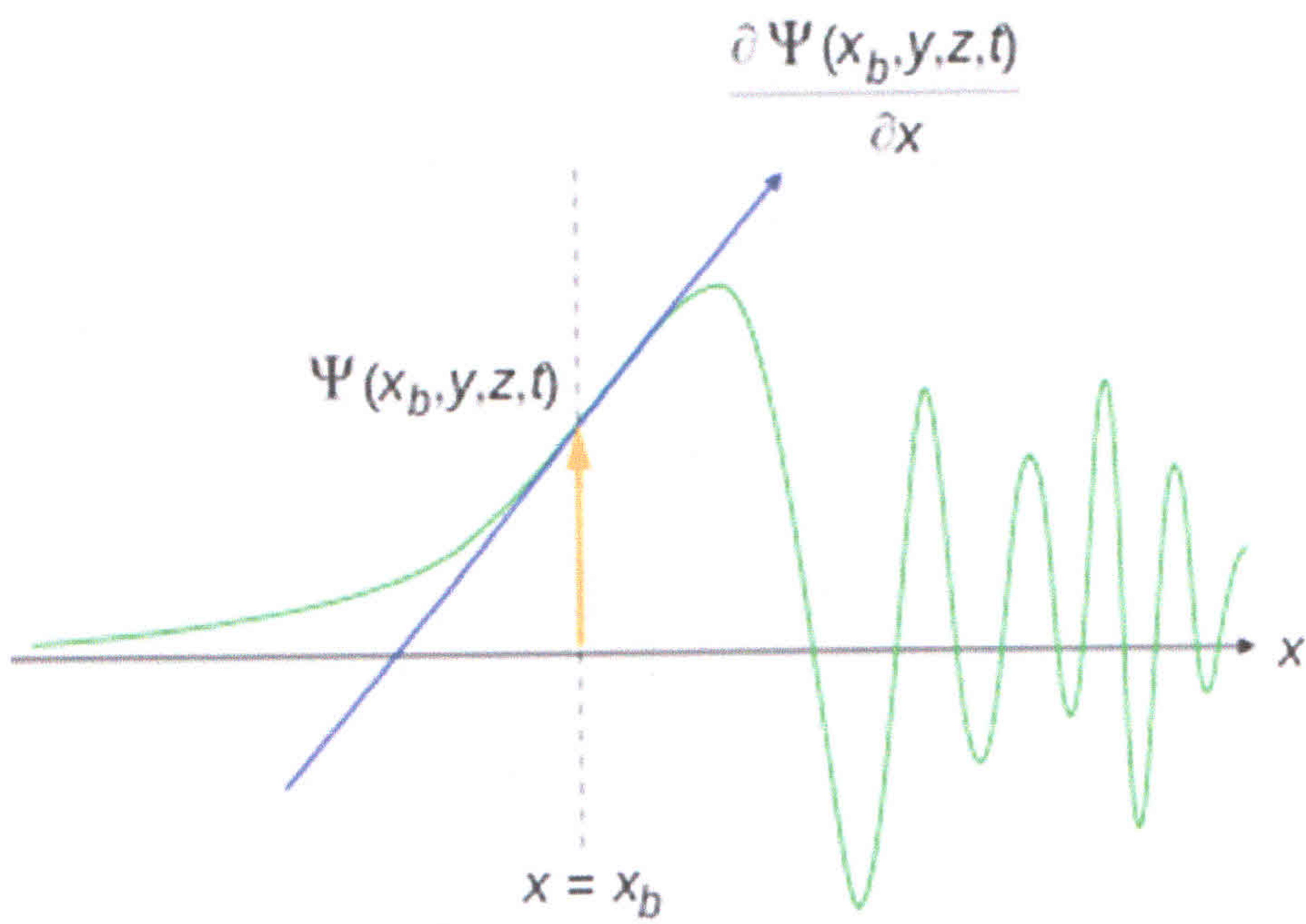
THE END



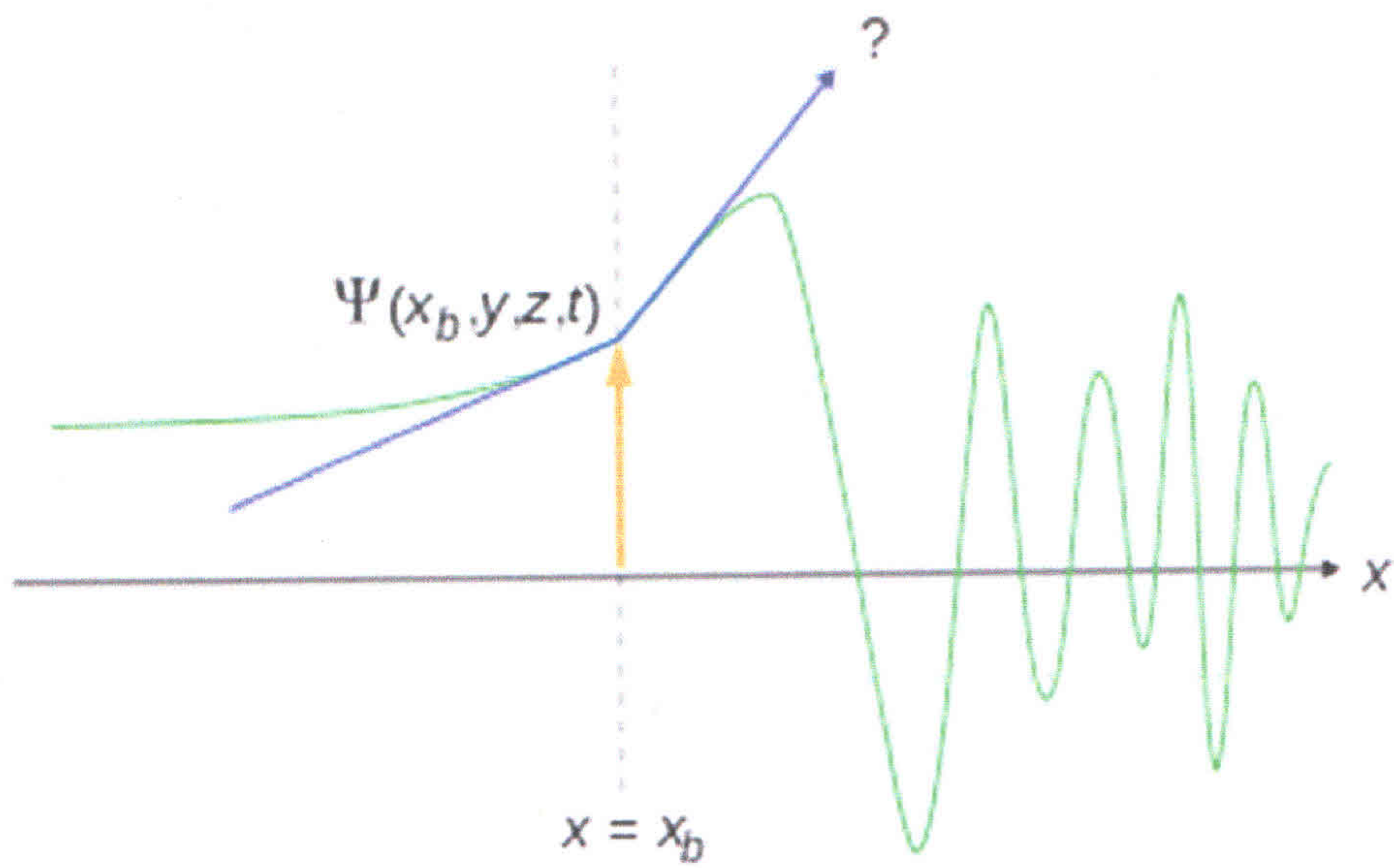
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Continuously differentiable



Discontinuous



Schrodinger's Equations

$$i\hbar \frac{\partial \Psi}{\partial t} = -\frac{\hbar^2}{2m} \left(\frac{\partial^2 \Psi}{\partial x^2} + \frac{\partial^2 \Psi}{\partial y^2} + \frac{\partial^2 \Psi}{\partial z^2} \right) + V(x, y, z, t) \Psi.$$

$$\Psi(x_b, y_b, z_b, t)$$

$$\frac{\partial}{\partial x} \Psi(x_b, y_b, z_b, t) \quad \frac{\partial}{\partial y} \Psi(x_b, y_b, z_b, t) \quad \frac{\partial}{\partial z} \Psi(x_b, y_b, z_b, t)$$

$$\frac{\partial}{\partial t} \rho(\mathbf{r}, t) + \nabla \cdot \mathbf{j} = 0,$$

$$\rho = |\Psi|^2 = \Psi^*(\mathbf{r}, t) \Psi(\mathbf{r}, t)$$

$$\mathbf{j} = \frac{1}{2m} (\Psi^* \hat{\mathbf{p}} \Psi - \Psi \hat{\mathbf{p}} \Psi^*)$$

$$\langle \psi | \hat{H} | \psi \rangle = \int \psi^*(\mathbf{r}) \left[-\frac{\hbar^2}{2m} \nabla^2 \psi(\mathbf{r}) + V(\mathbf{r}) \psi(\mathbf{r}) \right] d^3\mathbf{r} = \int \left[\frac{\hbar^2}{2m} |\nabla \psi|^2 + V(\mathbf{r}) |\psi|^2 \right] d^3\mathbf{r} = \langle \hat{H} \rangle$$

$$\frac{1}{c^2} \frac{\partial^2}{\partial t^2} \psi - \nabla^2 \psi + \frac{m^2 c^2}{\hbar^2} \psi = 0.$$

$$\hat{H}_{\text{Dirac}} = \gamma^0 [c \boldsymbol{\gamma} \cdot (\hat{\mathbf{p}} - q \mathbf{A}) + mc^2 + \gamma^0 q \phi] ,$$

