Mathematica equations

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Goal

Set $\frac{du}{dt} = D(\frac{d^2u(x=0,t=1)}{dx^2}) + F(u(x=0,t=1)) = 0$ and solve for m

[Negative] diffusion term $= -D * \frac{d^2u(x=0,t=1)}{dx^2}$

$$\text{numerator} = \left[m\rho\sqrt{D\pi} \right] \text{ X}$$
$$\left[m^2(1 + (3\alpha - 1)k + 2\alpha k^2(\alpha - 1)) + (4m\rho\sqrt{D\pi})(1 + 2\alpha k) + (4\pi D\rho^2)(1 + (\alpha - 1)k) \right]$$

$$\text{denominator} = \left[m^2(1 + 2\alpha k) + (4m\rho\sqrt{D\pi})(1 + (\alpha - 1)k) + (4\pi D\rho^2) \right]^2$$

Reaction term $= [2ku] [1 - u] [u - \hat{u}]$

$$\text{numerator} = \left[-4m\rho k\sqrt{D\pi} \right] \left[m + mk(\alpha - 1) + 2\rho\sqrt{D\pi} \right] \left[m + 2\alpha km + 2\rho\sqrt{D\pi}(1 + (\alpha - 1)k) \right] \text{ X}$$
$$\left[m^2(\hat{u} - 1)(1 + 2\alpha k) + 4\pi D\rho^2 \hat{u} + 2m\rho\sqrt{D\pi}(2\hat{u} - 1)(1 + (\alpha - 1)k) \right]$$

$$\text{denominator} = \left[m^2(1 + 2\alpha k) + 4m\rho\sqrt{D\pi}(1 + (\alpha - 1)k) + 4\pi D\rho^2 \right]^3$$