

$$y' + 5y = 0 \quad \left| \quad \frac{dy}{dx} = -5y\right.$$
$$y' = -5y \quad \left| \quad \int \frac{1}{y} dy = \int -5 dx\right.$$
$$\ln|y| = -5x + C_1$$

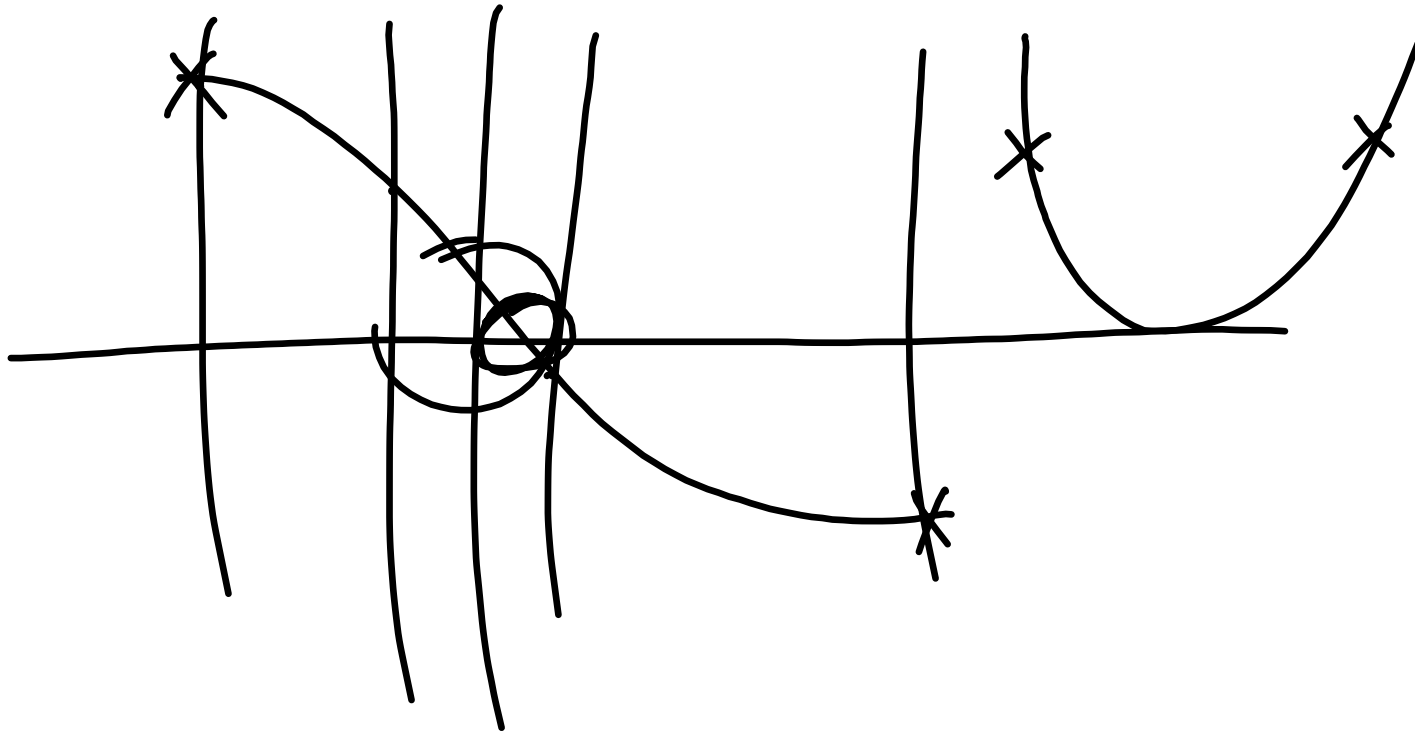
$$|y| = e^{-5x + C_1} = e^{-5x} e^{C_1}$$

The term  $e^{-5x}$  is circled in red. The term  $e^{C_1}$  is circled in black and labeled  $C_2$  below it.

$$e^{-x}$$

$5 \rightarrow 3\text{-m\u00e1s. K\u00f6r\u0304}$ .

$$\Rightarrow e^{5x}, x \cdot e^{5x}, x^2 \cdot e^{5x}$$



$$\lambda = 3 + 4i \rightarrow 3\text{-m\u00e4s. k.}$$

$$e^{(3+4i)x}, x \cdot e^{(3+4i)x}, x^2 \cdot e^{(3+4i)x}$$

$$e^{3x} \cdot \cos 4x, e^{3x} \cdot \sin 4x \quad | \quad x \cdot e^{3x} \cdot \cos 4x, x \cdot e^{3x} \cdot \sin 4x$$

$$\begin{aligned}
 & \begin{vmatrix} 1 & 1 & 1 \\ \lambda_1 & \lambda_2 & \lambda_3 \\ \lambda_1^2 & \lambda_2^2 & \lambda_3^2 \end{vmatrix} = \begin{vmatrix} 1 & 1 & 1 \\ 0 & \lambda_2 - \lambda_1 & \lambda_3 - \lambda_1 \\ 0 & \lambda_2^2 - \lambda_1^2 & \lambda_3^2 - \lambda_1^2 \end{vmatrix} \\
 & = \begin{vmatrix} 1 & 1 & 1 \\ 0 & \lambda_2 - \lambda_1 & \lambda_3 - \lambda_1 \\ 0 & 0 & (\lambda_3 - \lambda_1)(\lambda_3 + \lambda_1) - (\lambda_2 - \lambda_1)(\lambda_2 + \lambda_1) \end{vmatrix}
 \end{aligned}$$

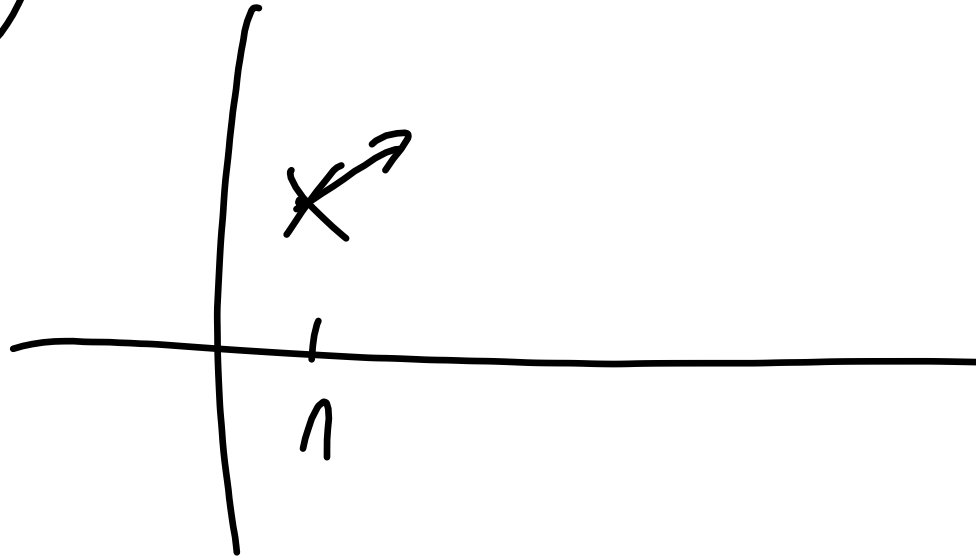
$$\begin{aligned}
 &= 1 \cdot (a_2 - a_1) \cdot \underbrace{(a_3^2 - a_1^2)}_{(a_3 - a_1)(a_3 + a_1)} - (a_3 - a_1)(a_2 + a_1) \\
 &= (a_2 - a_1) \cdot (a_3 - a_1) \cdot [a_3 + \cancel{a_1} - a_2 - \cancel{a_1}]
 \end{aligned}$$

$$e^{(0+i)x} \rightarrow e^{0x} \cdot \underline{\cos x}, e^{0x} \cdot \sin x$$



$$0 + 1i$$

$$y = c_1 \cdot g(x) + c_2 \cdot h(x)$$



$$\begin{aligned} \dot{y} &= c_1' y_1 + c_2 y_1' + d_1' y_2 + d_2 y_2' = \\ &= \underbrace{c_1' y_1 + d_1' y_2}_{=0} + c_2 y_1' + d_2 y_2' \end{aligned}$$

$$m = \ln x + \frac{SPS}{\quad}$$