$$\lambda \in R \ fixed. \ Solve \ for \ reals:$$

$$3^{x+\lambda} + 3x + 3\lambda = 1$$

Proposed by Marin Chirciu-Romania

Solution by Tapas Das-India

$$Let \ y = x + \lambda$$
$$The \ equation \ can \ be \ written \ as \ 3^y + 3(y - \lambda) + 3\lambda = 1 \ or, 3^y + 3y = 1 \ (1)$$

$$Let \ f(y) = 3^y + 3y \ then \ f'(y) = 3^y \ln 3 + 3 > 0 \ \forall \ y \in R$$
$$f(x) \ is \ strictly \ increasing$$

$$For \ this \ equation \ (1) \ has \ at \ most \ one \ solution, clearly \ f(0) = 1$$

$$y = 0 \ satisfy \ the \ equation \ (1)$$

$$y = 0 \ is \ a \ solution \ or \ x + \lambda = 0 \ or \ x = -\lambda$$