Precalculus
Exponent equation that reduces to quadratic, natural base

Todor Milev

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Example

Solve the equation

$$e^{2x} - 3e^x - 4 = 0$$

Set $e^x = u$. Then $e^{2x} = u^2$.

$$u^2 - 3u - 4 = 0$$
$$(u - 4)(u + 1) = 0$$

$u = 4$	or	$u = -1$
$e^x = 4$	or	$e^x = -1$
$x = \ln 4$	or	no real solution
$x \approx 1.3863$		