Solve the equation $e^x + 15e^{-x} = 8$.

Let $t = e^x > 0$. Then $e^{-x} = \frac{1}{e^x} = \frac{1}{t}$.

The original equation can be rewritten as

$$t + 15\frac{1}{t} = 8.$$

Multiply both sides by t: $t^2 + 15 = 8t$

$\leadsto$ $t^2 - 8t + 15 = 0$

$\leadsto$ $(t-3)(t-5) = 0$

$\leadsto$ $t = 3$ or $t = 5$

$\leadsto$ $e^x = 3$ or $e^x = 5$

$\leadsto$ $x = \ln 3$ or $\ln 5$

Conclusion: the equation has two solutions: $\ln 3$ and $\ln 5$.