

Use Laplace transform methods to solve the differential equation:

$$\frac{d^2 f(t)}{dt^2} + 12 \frac{df(t)}{dt} + 32f(t) = 10 \cdot e^{-2t}$$

The initial conditions are $f(0) = 0$ and $\left. \frac{df}{dt} \right|_{t=0} = 0$.

$f(t) =$ _____