Differentiation of e

Match each function card from the first column with a card from subsequent columns.

The second column is in a form appropriate for differentiation, the third column show the differentiated function and the fourth column is simplified in fractional or surd form.

$y = (e^x)^2$	$y = e^{-2x}$	$\frac{dy}{dx} = -2e^{-2x}$	$\frac{dy}{dx} = 2e^{2x}$
$y = \frac{2}{\sqrt{e^x}}$	$y = e^{2x}$	$\frac{dy}{dx} = 2e^{2x}$	$\frac{dy}{dx} = e^{2x}$
$y = \frac{e^x}{\sqrt{e^x}}$	$y = 2e^{\frac{1}{2}x}$	$\frac{dy}{dx} = e^{2x}$	$\frac{dy}{dx} = -\frac{2}{e^x}$
$y = \frac{2}{e^x}$	$y = e^{\frac{1}{2}x}$	$\frac{dy}{dx} = -e^{-\frac{1}{2}x}$	$\frac{dy}{dx} = e^x$
$y = \frac{e^{4x}}{2e^{2x}}$	$y = e^x$	$\frac{dy}{dx} = e^x$	$\frac{dy}{dx} = -\frac{2}{e^{2x}}$
$y = \frac{1}{e^{2x}}$	$y = 2e^{-x}$	$\frac{dy}{dx} = e^{\frac{1}{2}x}$	$\frac{dy}{dx} = -\frac{1}{\sqrt{e^x}}$
$y = \sqrt{e^{2x}}$	$y = \frac{1}{2}e^{2x}$	$\frac{dy}{dx} = -2e^{-x}$	$\frac{dy}{dx} = \frac{1}{2}\sqrt{e^x}$
$y = 2\sqrt{e^x}$	$y = 2e^{-\frac{1}{2}x}$	$\frac{dy}{dx} = \frac{1}{2}e^{\frac{1}{2}x}$	$\frac{dy}{dx} = \sqrt{e^x}$