## Mathematics II

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Exam 2
22-12-2003

1. Find the area bounded by

$$
\begin{aligned}
& y=x \\
& y=2-x^{2}
\end{aligned}
$$

2. Find dw/ds and dw/dt by chain rule:

$$
\begin{aligned}
& w=e^{x+y} \sin (x y) \\
& x=s^{2}-t^{3} \\
& y=s+2 t
\end{aligned}
$$

3. Find $d z / d x$ and $d z / d y$, where $z=f(x, y)$ is given implicitly by the equation

$$
\ln (x y z)=x y^{2}
$$

