

## Section 3: Implicit differentiation

### Exercise level 1

1. Differentiate with respect to  $x$ :

(i)  $y^3$

(ii)  $\sin y$

(iii)  $e^y$

(iv)  $\ln y$

2. Given that  $y^4 + 2xy = x^2$ , find  $\frac{dy}{dx}$  in terms of  $x$  and  $y$ .