

## SOLUTIONS FIRST EXAM

1. **1**
2. (a)  **$2 \tan x$**   
(b)  **$x^{\sin x} \left( \frac{\sin x}{x} + \ln x \cos x \right)$**
3. (a)  **$\frac{2^{x^2}}{2 \ln 2} + c$**   
(b)  **$\frac{\ln(x^2+9)}{2} + 3 \arctan \left( \frac{x}{3} \right) + c$**
4. (a) **0**  
(b) **1**  
(c) **0**
5.  **$\ln(\ln(17))$**
6.  **$y(x) = 2 - x$**