

1. Find the root(s) of the function $y = (x - 4)^2$
2. Find the root(s) of the function $y = x^2 + 3x + 1$ (hint: quadratic formula)
3. Find the root(s) of the function $y = e^x - 2$
4. Find the derivative of $x^2 + 2x + 3$
5. Where does $x^2 + 2x + 3$ have a slope of zero?
6. Find the derivative of $\ln(x^2 + 2x + 3)$
7. Where does $\ln(x^2 + 2x + 3)$ have a slope of zero?
8. Find the partial derivative of $5x^2w^3$ with respect to x and with respect to w .
9. Demonstrate the function $\ln(x^2)$ is “monotonic” for any $x > 0$. That is, show that its slope is always positive when $x > 0$.