Exercise 1. If \( y = x^3 + 2x \) and \( \frac{dx}{dt} = 5 \), find \( \frac{dy}{dt} \) when \( x = 2 \).

Exercise 2. A stone dropped into a pond at time \( t = 0 \) causes a circular ripple that travels out from the point of impact at 0.5 m/s. At what rate is the area within the ripple increasing when its radius is 10m?

Exercise 3. Air is being pumped into a spherical balloon at a rate of 500 in\(^3\)/s. How quickly is the radius of the balloon increasing when the balloon contains 500\(\pi\) in\(^3\) of air?