1. (10 points) Compute the integral $\int_0^{18} \sqrt[3]{z} \, dz$.

2. (10 points) Many fish grow in a way that is described by the von Bertalanffy growth equation. For a fish that starts life with a length of 1 cm and has a maximum length of 30 cm, this equation predicts that the growth rate is $29e^{-a}$ cm/year, where $a$ is the age of the fish. How long will the fish be after 5 years?

3. (10 points) Compute the integral $\int x^2(x^3+5)^9 \, dx$ using $u$-substitution.