Problem 1

Find $\int_0^1 x\ dx$ by using geometry (the area of a triangle).

Problem 2

Find $\int_{-2}^0 \sqrt{4-x^2}\ dx$ by using geometry (part of the area of a circle).

Problem 3

Find $\frac{d}{dx}\left(\int_1^x \sqrt[3]{1+t^3}\ dt\right)$

Problem 4

Find $\frac{d}{dx}\left(\int_x^5 \sqrt[5]{t^2+t^4}\ dt\right)$

Problem 5

Find $\frac{d}{dx}\left(\int_2^{x^2} \frac{2}{1+t^2}\ dt\right)$

Problem 6

Find $\frac{d}{dx}\left(\int_{3x}^{x^2} \frac{2}{1+t^2}\ dt\right)$