

Reading Stewart §3.7, 3.9.

1. A rectangular poster is to have a total area of 2400 cm^2 with 2 cm margins on the sides and bottom, and a 4 cm margin at the top. What dimensions will give the largest printed area?
2. What is the largest possible volume of a (right circular) cone whose distance from vertex to circumference (along the surface of the cone) is 4 cm?
3. Find the (most general) antiderivatives of the following functions.
 - (a) $f(x) = 7x^4 - 3x^2 + 5$
 - (b) $g(x) = \sqrt{x}$
 - (c) $h(x) = \frac{4}{x^4}$
4. Find the (most general) antiderivatives of the following functions.
 - (a) $p(t) = 4t^7 - t^{4/7} + \frac{1}{t^{7/4}} + \frac{4}{7}$
 - (b) $q(u) = \frac{u^3 - 2u + 1}{\sqrt{u}}$
 - (c) $m(x) = -3 \cos x + 4 \sec^2 x + 5 \csc x \cot x$