

AP Calc Chapter 3 Extra-Credit

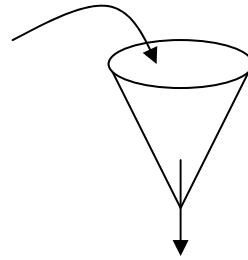
2 points each.

1. Find:

a) $\frac{dy}{dx}$ for $2x^3 + 2y^3 - 9xy = 0$.

b) the equation of the tangent at the point (2, 1)

2. A funnel in the form of a cone is 10 in. across the top and 8 in deep. What is flowing into the funnel at the rate of $12 \text{ in}^3/\text{sec}$. and out at the rate of $4 \text{ in}^3/\text{sec}$. How fast is the surface of the water rising when it is 5 in deep?



3. A horizontal trough is 16 m long and its ends are isosceles trapezoids with an altitude of 4 m, a lower base of 4 m and an upper base of 6 m. If the water level is decreasing at a rate of $.25 \text{ m/min}$ when the water is 3 m deep, at what rate is the water being drawn from the trough?

