

Math 17B

Vogler

In-Class Examples of Generic Applications of Definite Integrals

- 1) The weight of a 200 kg newborn whale at time  $t$  (in months) is increasing at the rate of  $90\sqrt{t}$  kg/month. How much weight will the whale gain from  $t = 1$  to  $t = 9$  months?
- 2) Due to the severe drought and water usage, Folsom Lake is losing water at an alarming rate. If Folsom Lake loses water at time  $t$  (in days) at a rate of  $40,000/(t+2)^2$  yards<sup>3</sup>/day for  $t \geq 0$ , what is the total loss of water from  $t = 0$  to  $t = 30$  days?