

INTRODUCTION TO CALCULUS

MATH 1A

UNIT 19: WORKSHEET

Problem 1: While fixing up a salad, you start pouring olive oil onto a plate. The area $A(r)$ of the oil increases with $\frac{d}{dt}A(r(t)) = 2$. If the radius is $r = 4$, what is the rate of change of r ?



Problem 2: The resistance R , voltage U and current I are related by Ohm's law.

$$U = RI .$$

Assume due to temperature change, the resistance $R(t)$ increases by a constant amount $R' = 2$. If the voltage stays constant $U = 4$ and $R = 1$ what is the rate of change of I ?

