## Lecture 25: Worksheet

## Related rates

1   An underwater oil spill releases oil at the constant amount. The area $A(r)$ of the oil increases with $A'(r(t)) = 2$. If the radius is $r = 4$, what is the rate of change of $r$?

2   The resistance $R$, voltage $U$ and current $I$ are related by

$$U = RI \ .$$

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