Problems discussed in the videos:

Video (1)
Example 1
Suppose that a certain school of economists modeled the Gross National Product of the
United States at time t (measured in years from January 1, 1990) by the formula
$$f(t) = 3.4 + .04t + .13e^{-t}$$
where the Gross National Product is measured in trillions of dollars. What was the
predicted percentage rate of growth (or decline) of the economy at $t = 0$ and $t = 1$?

Videos (2) – (3)
Example 2
Suppose that the value in dollars of a certain business investment at time t may be
approximated empirically by the function $f(t) = 750{,}000e^{.6\sqrt{t}}$. Use a logarithmic
derivative to describe how fast the value of the investment is increasing when $t = 5$ years.

Video (4) – (5)
Problem 21
A movie theater has a seating capacity of 3000 people. The number of people attending a
show at price p dollars per ticket is $q = (18{,}000/p) - 1500$. Currently, the price is \$6 per
ticket.
(a) Is demand elastic or inelastic at $p = 6$?
(b) If the price is lowered, will revenue increase or decrease?

Videos (6) – (7)
Problem 9
Suppose that the annual sales S (in dollars) of a company may be approximated
empirically by the formula
$$S = 50{,}000\sqrt{e^{\sqrt{t}}} \ ,$$
where t is the number of years beyond some fixed reference date. Use a logarithmic
derivative to determine the percentage rate of growth of sales at $t = 4$.