

Bring this completed sheet with you to class on the due date to be handed in at the beginning of the period.

- Examine the functions P , Q , and R in Section 3.4 Example 1 written in the form $P = ae^{kt}$.
 - For the function P , what is the value of k ? _____
Is P increasing or decreasing? _____
 - For the function Q , what is the value of k ? _____
Is Q increasing or decreasing? _____
 - For the function R , what is the value of k ? _____
Is R increasing or decreasing? _____
- Each of the functions P , Q , and R in Section 3.4 Example 1 can be written in the form $a(b)^t$ for some numbers a and b . If so, what would be the value of a ? _____
- Each of the functions P , Q , and R in Section 3.4 Example 1 can be written in the form $a(b)^t$ for some numbers a and b .
Give the value of b for $P = 5e^{0.3t}$ (round to two decimal places) _____
Give the value of b for $Q = 5e^{0.2t}$ (round to two decimal places) _____
Give the value of b for $R = 5e^{-0.2t}$ (round to two decimal places) _____
- Suppose each of the functions P , Q , and R in Section 3.4 Example 1 represented populations of different countries (in millions), where t is given in years.
For $P = 5e^{0.3t}$ the population grows at an annual rate of _____ % per year
and at a continuous rate of _____ % per year.
For $Q = 5e^{0.2t}$ the population grows at an annual rate of _____ % per year
and at a continuous rate of _____ % per year.
For $R = 5e^{-0.2t}$ the population decreases at an annual rate of _____ % per year
and at a continuous rate of _____ % per year.
- Suppose **Account A** pays 52% interest once per year. (OK, use your imagination.)
Account B pays 1% interest every week. (Note there are 52 weeks in a year.)
Without a calculator, decide which account is better after 1 year.
 - Account A
 - Account B
 - Both the same.