1. You open an IRA account with an initial deposit of $10,000 which will accumulate tax-free at 4 % per year, compounded continuously.

a) How much (to the nearest penny) will you have in your account after 10 years?

$ 14,918.25

b) How long does it take your initial investment to triple?
27.47 years

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2. If 500 people have a personal computer in a town of 10,000 employees. If the number of PC was growing at 20% a year and the population at 10% per year. How long will it take to have PC per person? *(assume continuous growth)*

29.96 years

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3) The population of a certain town is declining exponentially. If the population now is 10% less than it was 5 years ago.

(a) Find the decline rate.

2.107%

(b) When will the population be 50% of the original? *(find the half-life)*

32.89 years

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4) How long does it take amount to double at 8.5% compounded:
    a) annually   b) continuously

a) t = 8.496   *b) t = 8.154*

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5) If the quantity of a certain radioactive substance is decreases by 5% in 10 hours, find the half-life.

t = 135.13 hours

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6) The population of a certain town is declining exponentially due to immigration. If only 80% of the original population are still in town after 10 years:

a) Find the decline rate.

2.23%

b) How long will it take for the population to be half what it was?

31.06 years