1. The population of a city in 1992 was 59,000 and has been increasing 2.05% each year.

100 + 2.05
102.05%

a. Model this situation with an exponential eq.

$y = 59{,}000(1.0205)^x$

b. Find the population of the city in 1999.

68,005

$x = 7$

$y = 59{,}000(1.0205)^7$

2. The value of a house in 2006 was $156,000. The value of the house has been decreasing 8.4% each year.

100 − 8.4 = 91.6

a) Model this situation with an exponential eq.

$y = 156000(.916)^x$

b) Find the value of the house in 2010.

$x = 4$ $109,826.34

c) Find the value of the house in 2001.

$x = -5$ $241,806.33

The number of cells of a certain bacteria doubles every 30 minutes.

At 4:00 am there were 84 cells.

Find the number of cells at noon.

$84(2)^{16}$
$= 5{,}505{,}024$

The half-life of a certain medicine 20 minutes.

You took a 350 mg dose at 1:00 pm. Find the amount remaining at 3:00 pm.

$y = 350(.5)^6 = 5.47$ mg

120 min
÷ 20 min
6

A company claims that if you invest $15,000 your money will double every 4 years.

a) How much will you have in 12 year?

$15{,}000(2)^3 = 120{,}000$

b) How much will you have in 22 years?

$22 \div 4 = 5.5$

$15{,}000(2)^{5.5} = \$678{,}822.51$