

World's First Trillionaire

Note: This can be used with Section 5.1 of Finite Mathematics or Section 2.6 of Calculus with Applications.

An article in *The New York Times* discussed how long it will take for Bill Gates, the world's richest businessman, to become the world's first trillionaire.* His birthday is Oct. 28, 1955, and on July 16, 1997, he was worth \$42 billion. (Note: a trillion dollars is 1000 billion dollars.)

a. Assume that Bill Gates' fortune grows at an annual rate of 58%, the historical growth rate of Microsoft stock, which makes up most of his wealth. Find the age at which becomes a trillionaire. (*Hint: Use the formula for interest compounded annually, $A = P(1 + i)^n$, with $P = 42$. For readers of *Finite Mathematics*, graph the future value as a function of n on a graphing calculator, and find where the graph crosses the line $y = 1000$. For readers of *Calculus with Applications*, use logarithms to solve for n .)*

b. Repeat part a using 10.9% growth, the average return on all stocks since 1926.

c. What rate of growth would be necessary for Bill Gates to be a trillionaire by the time he is eligible for Social Security on Jan. 1, 2022, after he has turned 66?

Answers can be found on the next page.

* *The New York Times*, July 20, 1997, Sec. 4, p. 2.

Answers to **World's First Trillionaire**

- a. 48
- b. 73
- c. 13.8%