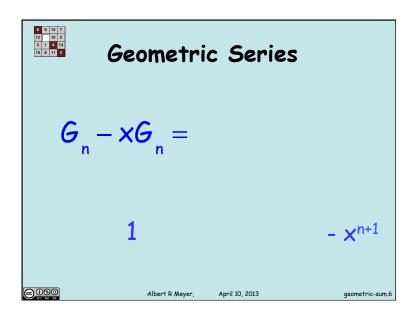


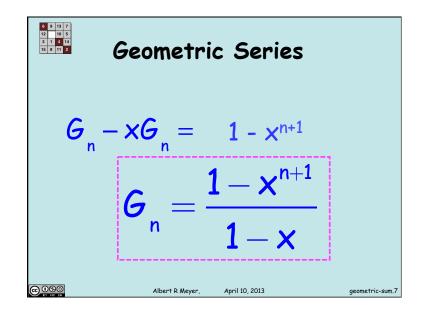
Geometric Series

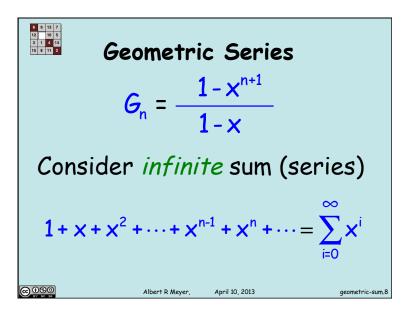
$$G_{n} = 1 + x + x^{2} + \cdots + x^{n}$$

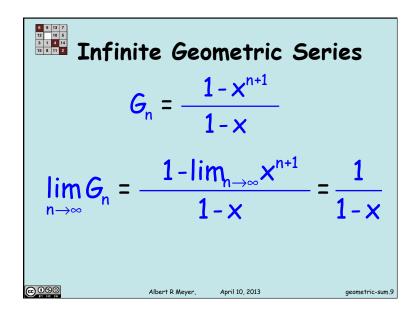
$$-xG_{n} = -x - x^{2} - \cdots + x^{n} - x^{n+1}$$

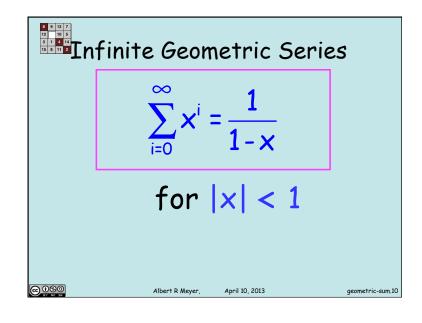
$$1 \qquad -x^{n+1}$$
Albert R Meyer, April 10, 2013 geometric-sum, 5

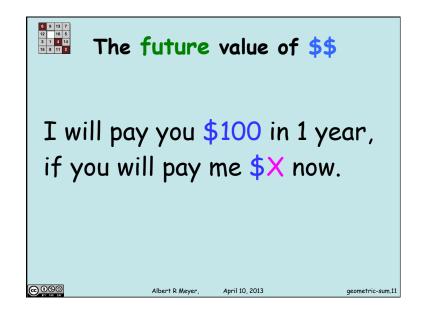


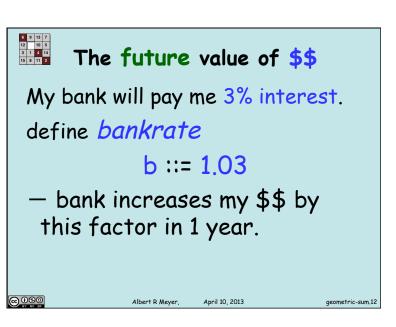




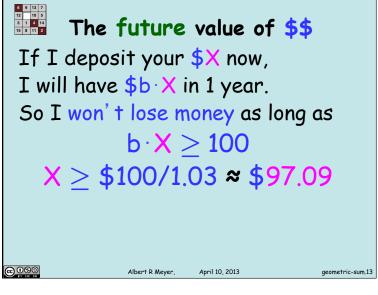


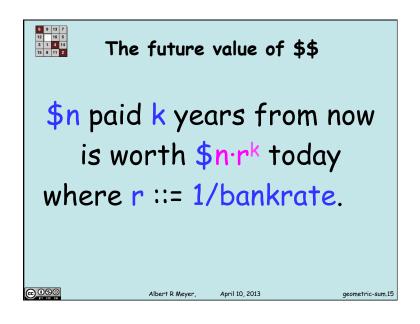


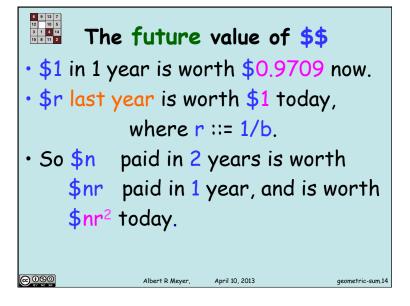


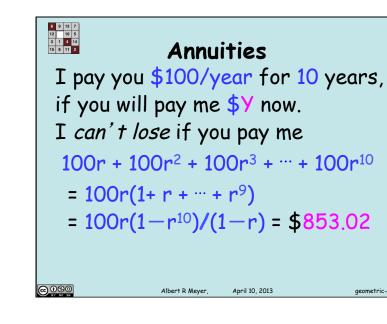


6 9 13 7 12 10 5 3 1 4 14 15 8 11 2 The future value of \$\$ If I deposit your \$X now, I will have $b \times X$ in 1 year. So I won't lose money as long as $b \cdot X > 100$ X > \$100/1.03 ≈ \$97.09 Albert R Meyer April 10, 2013











Annuities

I pay you \$100/year for 10 years, if you will pay me \$853.02.

QUICKIE: If bankrates unexpectedly increase in the next few years,

A. You come out ahead

B. The deal stays fair

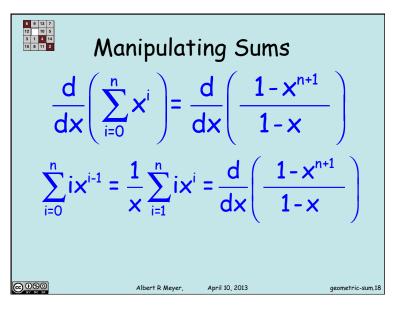
C. I come out ahead

 $\bigcirc 0 \otimes 0$

Albert R Meyer

April 10, 2013

geometric-sur





Manipulating Sums

$$\sum_{i=1}^{n} i x^{i-1} = \frac{x - (n+1)x^{n+1} + nx^{n+2}}{(1-x)^2}$$

@000

Albert R Meyer,

April 10, 2013

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