5/11 Algebra I - Downing

Compound Interest is the interest earned on the principal and on previously earned interest. The balance y of an account earning compound interest is

$$y = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = Principal

r = annual interest rate (APR) in decimal form

t = time in years

n = # of times compounding per year

Compounding	(n)
annually	1
Semi-annually	2
quarterly	4
monthly	12
weekly	52
daily	365

Ex) $2000 deposit that earns 5% annual interest compounded quarterly for 7 years.

$y = 2000\left(1 + \frac{.05}{4}\right)^{(4 \cdot 7)} = \$2831.98$

Ex) $1400 deposit that earns 10% annual interest compounded monthly for 15 years.

$y = 1400\left(1 + \frac{.1}{12}\right)^{(12 \cdot 15)} = \$6235.48$

Ex) $6200 deposit that earns 9.2% annual interest compounded monthly for 12 years.

$y = 6200\left(1 + \frac{.092}{12}\right)^{1(2b)} = \$18,621.90$

$y = a(b)^x \rightarrow$ basic exponential

$y = a(1+r)^t \rightarrow$ growth

$y = a(1-r)^t \rightarrow$ decay

HW - Worksheet Packet

PC Monday