8.3 – Compound Interest – Present Value

Formulas:

$PV = \frac{A}{(1+i)^n}$ or $PV = A(1+i)^{-n}$ $= \frac{1}{(1+i)^n}$

↳ Principal

$A = P(1+i)^n$

$\frac{A}{(1+i)^n}$

8.3 – Compound Interest – Present Value

Example 1: $= A$

Mike needs to have $10,000 in the bank in 12 years. He secures an interest rate of 6%/a compounded monthly. How much does he need to put into the bank today?

$i = \frac{0.06}{12} = 0.005$

$n = 12 \times 12 = 144$

$PV = A(1+i)^{-n}$

$PV = 10000(1.005)^{-144}$

$PV = \$4,876.26$

Example 2:

Melanie bought a new computer. She didn't have the money, so her parents paid for it, but they charged her 4%/a compounded annually. In two years, she paid back the full amount with interest of $794.42. How much did the computer cost her?

$i = \frac{0.04}{1} = 0.04$

$n = 2$

$A = 794.42$

$PV = A(1+i)^{-n}$

$PV = 794.42(1.04)^{-2}$

$PV = \$734.49$