Lesson 3: Present Value. *How much is it worth now?*

Ex. 1: Dianne owns a Savings Bond that was given to her by her grandmother. The Bond earned 6%/a interest compounded monthly. When she cashed it in it was worth $3372.13. How much did her grandmother pay for it five years ago?

\[
P V = A(1 + i)^n
\]

\[
P V = 3372.13(1.005)^{-60}
\]

\[
P V \approx 2500
\]

Example 2: Sammy will need $3000 when he starts college in two years. His bank offers an 8%/a compounded quarterly short term savings account. How much would he need to deposit today to reach his goal?

\[
P V = A(1 + i)^n
\]

\[
P V = 3000(1.02)^{-8}
\]

\[
P V \approx 2560.47
\]
Lesson 3: Present Value.  *How much is it worth now?*

\[ A = P(1 + r)^n \]

Lesson 3: Activity  \[ PV = A \left(1 + \frac{r}{n}\right)^{-nt} \]

**Compound Interest Assignment**

1) Calculate the final amount of $3700 after 3 years for each rate.
   a) 15% compounded semi-annually
   
   b) 8% compounded quarterly
   
   c) 2.6% compounded weekly (52 weeks in a year!)

2) Calculate the present value of $2500 due in 3 years for each rate.
   a. 5% compounded monthly

   b. 2.8% compounded annually

   c. 2.6% compounded daily

3) Al Bino wants to invest some money, which investment is better? **Explain** how you determined your answer.
   *Hint: Does it matter how much he invests?*

   Investment A: 6% compounded semi-annually?

   Investment B: 4.5% compounded quarterly?
Lesson 3: Present Value. *How much is it worth now?*

4) Jim Nasium bought a computer and is due to pay $2734.51 in two years. His loan is charged 9% interest compounded monthly.
   a. If he pays of his loan now, how much will he need to pay?

   b. How much will he save?

5) Chester Field deposited $300 in an account that paid 12% interest compounded semi-annually. If he leaves it there for 6 years, how much will he have?

6) Brett and Steven’s grandparents gave them each $10000 to use when they go to college in 6 years. Brett invested his in a GIC that paid 2.25% compounded quarterly, while Steven invested his in a GIC that paid 1.75% compounded monthly. Who made more money? How much more?

7) Ima Nobb is getting a raise! Her pay will be increased by 2.75% each year for the next 4 years. Her current salary is $35500 per year. What will her salary be in 4 years?