1. Monthly payment for each loan:
   - For 15-years loan

$$Follow\,A_n = R\frac{1-(1+i)^{-n}}{i} \Leftrightarrow R = \frac{iA_n}{1-(1+i)^{-n}} = \frac{\frac{0.0625}{12}\times\$150,000}{1-\left(1+\frac{0.0625}{12}\right)^{-180}} = \$1,286.13$$

   - For 30-years loan

$$Follow\,A_n = R\frac{1-(1+i)^{-n}}{i} \Leftrightarrow R = \frac{iA_n}{1-(1+i)^{-n}} = \frac{\frac{0.0675}{12}\times\$150,000}{1-\left(1+\frac{0.0675}{12}\right)^{-360}} = \$972.90$$

   So if you choose a 15-years loan, your monthly payment is $1286.13 and a 30-year loan, your monthly payment is $972.90.

2. Construct amortization loan of four annual:

$$Follow\,A_n = R\frac{1-(1+i)^{-n}}{i} \Leftrightarrow R = \frac{iA_n}{1-(1+i)^{-n}} = \frac{0.06\times\$25,000}{1-(1+0.06)^{-4}} = 7,214.79$$

Number of Payment	Unpaid Balance	Interest Paid	Equally monthly Payment	Payment without Interest
1	$ 25,000.00	$ 1,500.00	$ 7,214.79	$ 5,714.79
2	$ 19,285.21	$ 1,157.11	$ 7,214.79	$ 6,057.68
3	$ 13,227.53	$ 793.65	$ 7,214.79	$ 6,421.14
4	$ 6,806.39	$ 408.38	$ 7,214.79	$ 6,806.41
	Total	$ 3,859.15	$ 28,859.16	$ 25,000.01

3. Amount owe after 26 month:

$$Follow: A_{n(def)} = A_n(1+i)^{-d} = R\left[\frac{1-(1+i)^{-n}}{i}\right](1+i)^{-d}$$

$$\Leftrightarrow R = \frac{iA_n(1+i)^{d}}{1-(1+i)^{-n}} = \frac{\frac{0.18}{12}\times 29,000\times\left(1+\frac{0.18}{12}\right)^{1}}{1-\left(1+\frac{0.18}{12}\right)^{-60}} = \$747.46$$

   Because of the payment beginning one month from today, so the amount after 26 month is as the same as after 25th payment. The amount after 26 month is $26,590.34, which calculated by:

$$S = \$29,000(1+0.015)^{25} = \$42,077.42$$

$$-$$

$$S_{25} = \$747.46\left(\frac{1-1.015^{-25}}{0.015}\right) = \$15,487.08$$

4. Calculate for number of years which you can get require amount:

$$Follow:\; S = P(1+i)^n \Leftrightarrow \$94,000 = \$14,000(1+0.03)^n \Rightarrow 1.03^n = 6.71$$

$$\Rightarrow n = \log_{1.03} 6.71 = 142.32 = 64.42$$

$$\Rightarrow n = 64.42\; years$$

5. Calculate for interest you must earn in order to get require amount:

$$Follow:\; S = P(1+i)^n \Leftrightarrow \$78,000 = \$10,000(1+i)^4 \Rightarrow 7.8 = (1+i)^4$$

$$\Rightarrow i = 1.67 - 1 = 0.6712$$

$$\Rightarrow i = 67.12\%$$

6. Money that Mr. Samrach has:

i. At 1 December, 2007

$$Follow:\ S_n = R\frac{(1+i)^n - 1}{i} = \$10,000\frac{(1+0.10)^{15} - 1}{0.10} = \$317,724.82$$

ii. At 1 December, 2008

$$Follow:\ S = P(1+i)^n = \$317,724.82(1+0.10)^1 = \$349,497.30$$

iii. At 1 December, 2009

$$Follow:\ S = P(1+i)^n = \$317,724.82(1+0.10)^5 = \$511,699$$

7. Determine the number of payments:

$$Follow: A_n = R\left[\frac{1-(1+i)^{-n}}{i}\right] \Leftrightarrow 1,000 = 325\left[\frac{1-(1+0.25)^{-n}}{0.25}\right]$$

$$\frac{1,000\times 0.25}{325} = 1 - 1.25^{-n}$$

$$0.77 = 1 - 1.25^{-n} \Leftrightarrow 1.25^{-n} = 1 - 0.77 = 0.23$$

$$\Rightarrow -n = \log_{1.25} 0.23 \Leftrightarrow n = 6.59 \approx 7\ years$$

នៅក្នុងករណីនេះ យើងឃើញថាគេត្រូវសងប្រាក់ត្រលប់ទៅវិញចំនួន ៧ ដែល ៦ ដងមានចំនួន ៣២៥ លានរៀលស្មើៗគ្នា ហើយនៅលើកចុងក្រោយគឺលើកទី ៧ គេត្រូវសងប្រាក់ត្រលប់ទៅវិញចំនួន ១៩០.៩២ លាន រៀល។

8. Compute for:

i. Yearly Payment (R):

$$Follow: A_n = R\left[\frac{1-(1+i)^{-n}}{i}\right]$$

$$\Leftrightarrow R = \frac{iA_n}{1-(1+i)^{-n}} = \frac{0.10\times 1,000,000}{1-(1+0.10)^{-3}} = \$402,114.80$$

ii. Table of Amortization:

Number of Payment	Unpaid Balance	Interest Paid	Equally monthly Payment	Payment without Interest
1	$ 1,000,000.00	$ 100,000.00	$ 402,114.80	$ 302,114.80
2	$ 697,885.20	$ 69,788.52	$ 402,114.80	$ 332,326.28
3	$ 365,558.92	$ 36,555.89	$ 402,114.80	$ 365,558.91
	Total	$ 206,344.41	$ 1,206,344.40	$ 999,999.99

9. Compute for:

i. Principle:

$$S_1 = P_1(1+i)^{n_1} \Rightarrow P_1 = \frac{S_1}{(1+i)^n} = \frac{100,000,000}{(1+0.12)^1} = 89,285,714.29R$$

$$S_2 = P_2(1+i)^{n_1} \Rightarrow P_2 = \frac{S_2}{(1+i)^{n_2}} = \frac{125,000,000}{(1+0.12)^2} = 99,649,234.69R$$

$$S_3 = P_3(1+i)^{n_1} \Rightarrow P_3 = \frac{S_3}{(1+i)^{n_3}} = \frac{150,000,000}{(1+0.12)^3} = 106,767,037.20R$$

ii. Total: $100,000,000 + 125,000,000 + 150,000,000 = 375,000,000R$