Personal finance.

1.

A offers 2.9% interest

B offers 3 1/4

Answer

Bank B

The percentage interest is almost the same and compound quarterly will have a better interest than compounded continously.

2. (a) Take 20 dollars

using formular $A = P\left[\frac{\left(1+\frac{r}{12}\right)^{12t}-1}{r/12}\right]$

$= 20\left[\frac{\left(1+\frac{0.06}{12}\right)^{12\times 30}-1}{\frac{0.06}{12}}\right]$

$= 20\left[\frac{(1+0.005)^{360}-1}{0.005}\right]$

$= 20{,}090$ dollars

(b) $20 \times (30\times 12) = 7{,}200$ dollars

(c) $20{,}090 - 7{,}200$

$= 12{,}890$ Dollars

d)

$1{,}000{,}000 = P\left[\frac{\left(1+\frac{r}{12}\right)^{12t}-1}{r/12}\right]$, $1000\,000 = P\left[\frac{\left(1+\frac{0.06}{12}\right)^{12\times 20}-1}{\frac{0.06}{12}}\right]$

$1000000 = P\left[\frac{6.0226-1}{0.005}\right]$

$\frac{0.005}{5.022} \times 1\,000\,000 \times P \times \frac{5.022}{0.005} \times \frac{0.005}{5.022}$

$\frac{0.005}{6.0226} \times 1600000 = P$

$P = 9{,}956$ Dollars

e 5yrs deposit $300
5yrs deposit $600
20yrs deposit $1500

(i) $A = \frac{P\left[\left(1+\frac{r}{12}\right)^{12t}-1\right]}{r/12}$

$= \frac{300\left[\left(1+\frac{0.06}{12}\right)^{12\times5}-1\right]}{\frac{0.06}{12}}$

$= \frac{300 \times 0.3489}{0.005}$

$= 20,934$ dollars

ii) 6% 25yrs 20,934

$A = P\left(1+\frac{r}{100}\right)^{n}$

$20,934\left(1+\frac{6}{100}\right)^{25\times12}$

$20,934 \times (1.06)^{300}$

$= $ ~~39,062 dollars~~

817, 733, 517, 795 dollars

(iii) $\frac{600\left[\left(1+\frac{0.06}{12}\right)^{12\times5}-1\right]}{\frac{0.06}{12}}$

$\frac{600 \times 0.3489}{0.005}$

$= 41,868$

(iv) $41,868\left(1+\frac{6}{100}\right)^{20\times12}$

$41,868(1.06)^{240}$

49, 578, 099, 991 dollars

(v) $= \frac{1500\left[\left(1+\frac{0.06}{12}\right)^{20\times12}-1\right]}{\frac{0.06}{12}}$

$= \frac{3,465}{0.005}$

$= 693,000$ dollars

(vi) ~~41,868~~

817, 733, 517, 795
49 578 099 991 +
693 000 +

867 311 310 786

$= 867,311,310.785$