

HP-12C Notes

Richard J. Nelson

Wikipedia explanation of APR.

http://en.wikipedia.org/wiki/Annual_percentage_rate

Federal Regulation z has its basis in the Truth in Lending Act of 1968. Per Wikipedia: "It is legal in Title I of the [Consumer Credit Protection Act](#), as amended ([15 U.S.C. § 1601 et seq.](#)). The regulations implementing the statute, which are known as "[Regulation Z](#)", are codified at 12 [CFR](#) Part 226."

During the eleven years (1974-84) I edited and published an HP Calculator User Group (PPC) Newsletter I was curious about the legal basis for APR financial calculations. One of our local members (we had thousands of members worldwide) often told me about his weekend "hobby" of looking through the local newspaper auto ads that would give the car payment values for the cars being sold. Since he had an HP-12C he would check "the numbers" and to his delight he found many (up to 40%) errors.

I decided to research the idea behind APR and started making phone calls. This was long before Internet. I eventually called – this is from memory as it was nearly 30 years ago - a government office in Washington DC. I wanted to know the Regulation z equations for calculating APR. I was told that there were no equations and that APR as defined in the regulation was as calculated by the HP-12C.

The HP-12C was the "gold standard" in terms of interest rate calculations at the time just as it is today. I must have made reference to the call – and the results – in one of the newsletters, but I haven't taken the time to research the 5,000 pages PPC published. They are available on CD/DVD at:

<http://www.pahhc.org/ppccdrom.htm>.

I started my research by calling the car dealers only to find that they used loan services to do the calculations. These were usually done "by computer." When HP started the scientific and financial calculator business they used Binary Coded Decimal, BCD, as the method of making the digital calculations. Computers use binary and errors in converting from decimal to binary and back again would especially show up in the financial calculations as performed by the HP-12C. It took more than a decade for even the largest computer to even come close in accuracy to the HP-12C.

Even today, HP is revising their financial calculator product line to maintain their continued leadership in the finance calculator market. There have been many models that were "better" than the HP-12C, but the old standard just can't be replaced my many in the finance world. Once mastered this RPN machine (most users don't realize that it is RPN) does the job easily. See the next page for other similar 12C versions. This is a page from a Calendar that we made for our annual HHC – HP Handheld Conference.

The Voyager Series: 1981-present

Scientific

HP15C "1.5"
HP16C "PR"



HP11C
"1.0"



HP10C
"0.5"



9/16/81

7/1/82

9/2/82

5/27/03

6/1/06

Business

HP12C
"1.0"



hp12c platinum
"Bondi"



HP12c p 25th Anniv



HP12c Prestige
(Brazil only)



HHC
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