



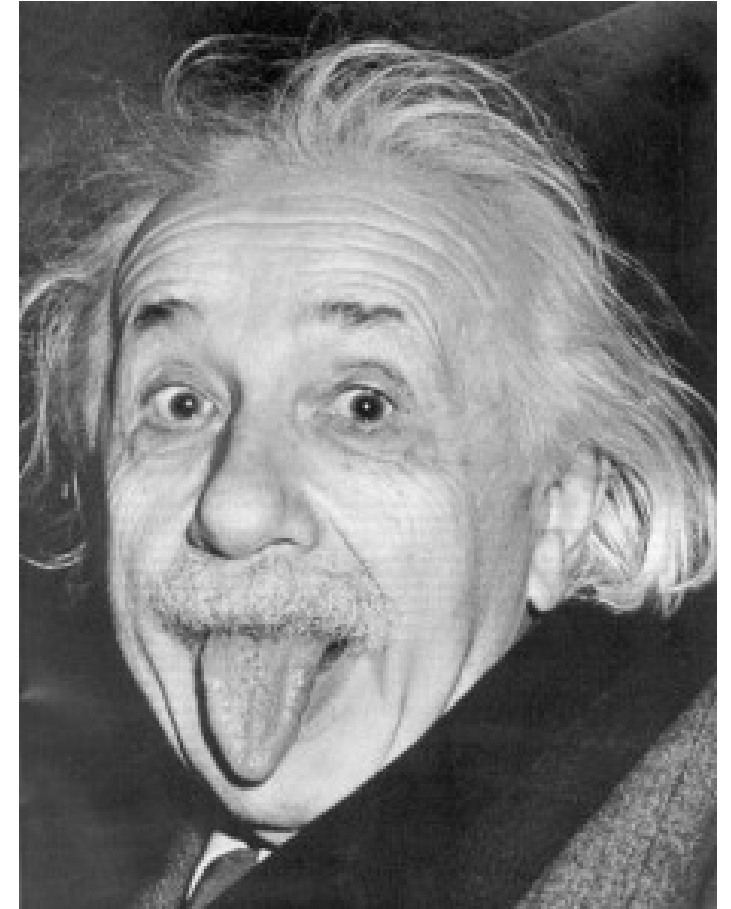
RULE OF 72

How long will it take for your investment to double?

What is the Rule of 72?

The Rule of 72 is a quick, useful formula that is often used to estimate the number of years to double invested money at a given annual rate of return.

Who discovered this idea?

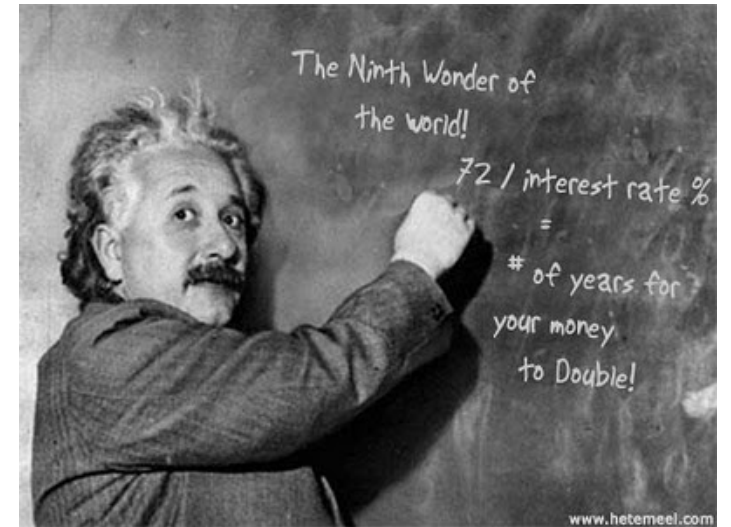


Albert Einstein

THE SIMPLE IDEA...?

$$\text{Years to double} = \frac{72}{\text{interest rate}}$$

Where: interest rate = rate of return on your investment



If an investment promises an 8% annual compounded rate of return, it will take approximately $(72/8) = 9$ years to double the invested money.

Note: A compounded annual rate of return of 8% is plugged in as 8 not 0.08 giving a result of 9 (not 900).

The formula has emerged as a simplified version of the original logarithmic calculation that involves complex functions like taking the natural log of numbers. **The rule applies to the exponential growth of an investment based on a compounded rate of return.**

$$\overset{\text{(Difficult!)}}{\curvearrowleft} T = \frac{\ln(2)}{\ln(1 + \frac{r}{100})} \cong \frac{72}{r} \overset{\text{(Easier!)}}{\curvearrowright}$$

" EDUCATION IS NOT
THE LEARNING OF FACTS,
BUT TRAINING THE MIND
TO THINK."
- ALBERT EINSTEIN

Where:

T=Time to Double

ln= Natural Log Function

r=Compounded interest rate per period

\cong = Approximately equal to

Why interest rate matters...

Age @ 4%		Age @8%		Age @12%	
29	\$10,000	29	\$10,000	29	\$10,000
47	\$20,000	38	\$20,000	35	\$20,000
65	\$40,000	47	\$40,000	41	\$40,000
		56	\$80,000	47	\$80,000
		65	\$160,000	53	\$160,000
				59	\$320,000
				65	\$640,000

4% Doubles Every 18 Years

8% Doubles Every 9 Years

12% Doubles Every 6 years



QUESTIONS?

Contact: kristinm@pnwfcu.org