*Compound Interest*
# RULE OF 72

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"Money makes money. And the money that money makes, makes money."

– Ben Franklin

Compound interest =
**earning interest on your interest**

You can use the

# Rule of 72

to approximate how long it will take for an **investment to double** at a given interest rate

# USEFUL FOR

**COMPARING INVESTMENTS**

**SAVINGS GOALS**

**RETIREMENT GOALS**

# HOW TO 72

Divide the rule number **(72)** by the annual interest rate **(R)** to find out the approximate time **(T)** required for doubling

\* The Rule of 72 only applies to compound interest, not to simple interest calculations

# HOW TO 72

ANNUAL
INTEREST
RATE

YEARS TO
DOUBLE

$$72 \div R = T$$

# HOW TO 72

3% ANNUAL
INTEREST
RATE

24 YEARS
TO DOUBLE

**72** ÷ **3** = **24**

# COMPARING THE MATH

Although scientific calculators and spreadsheet programs have functions to find the accurate doubling time, the Rule of 72 is useful for mental calculations or when only a basic calculator is available

# COMPARING THE MATH

This table illustrates just how close the Rule of 72 is to the actual doubling time

| Interest rate | Actual years | Rule of 72 |
| --- | --- | --- |
| 1% | 69.66 | 72.00 |
| 2% | 35.00 | 36.00 |
| 3% | 23.45 | 24.00 |
| 4% | 17.67 | 18.00 |

# COMPARING THE MATH

This table illustrates just how close the Rule of 72 is to the actual doubling time

| Interest rate | Actual years | Rule of 72 |
|---------------|--------------|------------|
| 5% | 14.21 | 14.40 |
| 6% | 11.90 | 12.00 |
| 7% | 10.24 | 10.29 |
| 8% | 9.01 | 9.00 |

# COMPARING THE MATH

This table illustrates just how close the Rule of 72 is to the actual doubling time

| Interest rate | Actual years | Rule of 72 |
| --- | --- | --- |
| 9% | 8.04 | 8.00 |
| 10% | 7.27 | 7.20 |
| 11% | 6.64 | 6.55 |
| 12% | 6.12 | 6.00 |

# Doubling
## IN ACTION

Modest increases in rates have a dramatic effect on the doubling time

| Years | 1.5% | 3% | 6% | 12% |
|---|---|---|---|---|
| 0 | $10,000 | $10,000 | $10,000 | $10,000 |
| 6 | | | | $20,000 |
| 12 | *In times of historically low interest rates, it's especially important to start investing early* | | $20,000 | $40,000 |
| 18 | | | | $80,000 |
| 24 | | $20,000 | $40,000 | $160,000 |
| 30 | | | | $320,000 |
| 36 | | | $80,000 | $640,000 |
| 42 | | | | $1,280,000 |
| 48 | $20,000 | $40,000 | $160,000 | $2,560,000 |

# THE TAKEAWAY

Use the Rule of 72 to estimate your potential savings. Time is money when it comes to compound interest—the longer you wait to get started, the less interest you'll earn.

# INVESTING CAN BE RISKY

Not all investments are guaranteed—some investments carry the risk of losing money, even when made through a financial advisor or financial institution

**Sources:** *All the Math You'll Ever Need* by Steven Slavin, BetterExplained.com

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