TSC | WILLIAM D. LAW, JR. LEARNING COMMONS

FINANCE MATH

1. What type of interest is mentioned?

Compound Interest

Simple Interest
(stop and figure)

$I = Prt$
$A = P + I$
$A = P + Prt$
$A = P(1 + rt)$

2. How many deposits or payments?

Multiple or Periodic

Single
(stop and figure)

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

3. When is the "big money" needed?

NOW – You make a large purchase in the ***present*** and pay it off over time.

$$\boldsymbol{P = \frac{pmt\left(1 - \left(1 + \frac{r}{n}\right)^{-nt}\right)}{\left(\frac{r}{n}\right)}}$$

LATER – You will be saving up to have a large amount in the ***future***.

$$\boldsymbol{A = \frac{pmt\left(\left(1 + \frac{r}{n}\right)^{nt} - 1\right)}{\left(\frac{r}{n}\right)}}$$

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A	final **A**mount (principal + interest)
P	**P**rinciple (initial or beginning amount)
r	interest **r**ate (in decimal form)
n	# of compounding periods per year
t	**t**ime (in years)
I	Interest
Y	effective annual **Y**ield
pmt	periodic payment
ADB	**A**verage **D**aily **B**alance
APR	**A**nnual **P**ercentage **R**ate

Effective rate – sometimes called the effective annual yield – is the simple interest rate that produces the same amount of money in an account at the end of one year as when the account is subjected to compound interest at a stated rate.

$$EY = \left(1 + \frac{r}{n}\right)^n - 1$$

Be sure to convert your decimal calculator result to a percent.

Rule of 72

$$\frac{72}{EY\ \%} = years\ to\ double$$

Credit Card Average Daily Balance

$$ADB = \frac{sum\ of\ the\ daily\ balances}{number\ of\ days\ in\ the\ billing\ cycle}$$

Credit Card Interest (This is the monthly finance charge on the Average Daily Balance):

$$I = ADB \times monthly\ rate \times 1(month)$$

or

$$I = ADB \times \frac{APR}{12} \times 1(month)$$

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