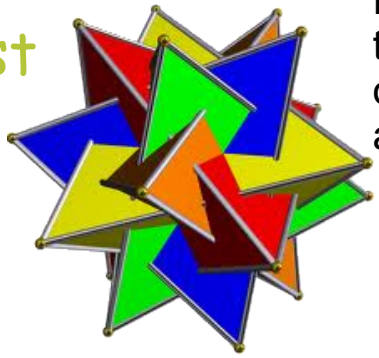
COMPOUND Interest



Allison wants to invest $2000.00. His bank offers an investment option that earns compound interest at a rate of 1.75% per year compounded annually for 3 years.

Interest period	Investment value at beginning of period	Interest earned I = Prt	Investment value at end of period
1	$2000	$2000x0.0175x1= $35	$2035
2	$2035	$2035x0.0175x1= $35.61	$2070.61
3	$2070.61	$2070.61x0.0175x1= $36.24	$2106.85

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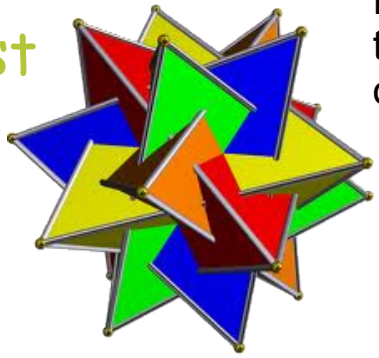

Allison wants to invest $2000.00. His bank offers an investment option that earns compound interest at a rate of 1.75% per year for ~~3~~ 10 years.

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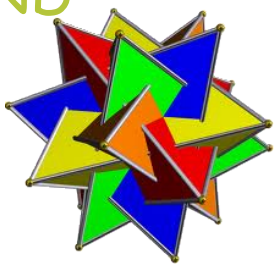
??

Formula:

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

A = final value of the investment ...(principal + interest)
P = principal
r = annual interest rate
n = number of compounding periods in a year
t = term of the investment or loan in number of years

COMPOUND Interest



Allison wants to invest $2000.00. Her bank offers an investment option that earns compound interest at a rate of 1.75% per year compounded annually for ~~3~~ 10 years.

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

$$A = 2000\left(1 + \frac{0.0175}{1}\right)^{(1)(10)}$$

$$A = 2000(1 + 0.0175)^{10}$$

$$A = 2000(1.0175)^{10}$$

$$A = 2000(1.18944)$$

$$A = \$2378.89$$

Calculate the final value of an initial investment of $6000.00. Interest is paid at 4% per annum, compounded semi-annually, for three years.

A = final value of the investment ...(principal + interest)
P = principal
r = annual interest rate
n = number of compounding periods in a year
t = term of the investment or loan in number of years

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

$$A = 6000\left(1 + \frac{0.04}{2}\right)^{(2)(3)}$$

$$A = 6000(1 + 0.02)^{6}$$

$$A = 6000(1.02)^{6}$$

$$A = 6000(1.1262)$$

$$A = \$6756.98$$

Calculate the final value of an initial investment of $8500.00. Interest is paid at 3.75% per annum, compounded semi-annually, for three years.

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

$$A = 8500\left(1 + \frac{0.0375}{2}\right)^{2(3)}$$

$$A = 8500\left(1 + 0.01875\right)^{6}$$

$$A = 8500\left(1.01875\right)^{6}$$

$$A = 8500(1.117907)$$

$$A = 1002.21 \quad 9502.21$$