Math 12 College Name_____

Make the Compound Interest Work for You!

1) Simple Interest Formula

Example: $I = PRT$

Interest = principal times rate times time

$I = 5000(0.02)(1)$

$I = \$100$

2) Compund Interest Formula

Annually

Semi-annually

Quarterly

Monthly

Use simple interest to find the ending balance. Redo principal for given compounding period.

3) $19,900 at 14% for 5 years

4) Compounded annually for 5 years

Use simple interest to find the ending balance. Redo principal for given compounding period.

5) $49,800 at 9% for 5 years

6) Redo compounded semi-annually

2) Compound Interest Formula

$A = P(1+i)^n$

$A = 5000(1+0.02)^2$

Annually

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$A = 5000(1+0.02)^1$

$A = 5,100$

Semi-annually

twice a year

$A = 5000\left(1+\frac{0.02}{2}\right)^{1\times 2}$

$A = 5000(1.01)^2$

$A = 5100.50$

Quarterly

4 times a year

$A = 5000\left(1+\frac{0.02}{4}\right)^4$

$A = 5000(1.005)^4$

$A = 5100.75$

Monthly

12

Use simple interest to find the ending balance. Redo principal for given compounding period.

3) $19,900 at 14% for 5 years

$I = PRT$

$I = 19,900 \times 0.14 \times 5$

$I = 13,930$

$\$33,830$

$A = 19,900(1+0.14)^5$

$A = 19,900(1.92)$

$A = \$38,315.75$

Use simple interest to find the ending balance. Redo principal for given compounding period.

$I = PRT$

5) \$49,800 at 9% for 5 years

$I = 49{,}800 \times 0.09 \times 5$

$I = 22{,}410$

Balance $72{,}210$

$A = 49{,}800\left(1 + \frac{0.09}{2}\right)^{10}$

$A = 49{,}800(1.045)^{10}$

$A = 77{,}337.87$

Find the total value of the investment after the time given.

7) $12,000 at 2% compounded annually for 7 years

$A = 12,000(1 + 0.02)^{1 \times 7}$

$A = 12,000\left(1 + \frac{0.02}{4}\right)^{28}$