

Quiz on 7.1 Simple Interest

Growth $A=P(1+r)^t$

Decay $A=P(1-r)^t$

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Calendar Math

Greatest Common Factor

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Homework ?'s

$$\textcircled{4} A=P(1-r)^t$$

$$345 = 500(1-r)^1$$

$$Y_1 = 345$$

$$Y_2 = 500(1-r)^1$$

$$r = .31$$

$$\textcircled{31\%}$$

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$$A = 500(1-.31)^x$$

2nd trace #1

$$x = 9$$

$$\textcircled{\$17.73}$$

b) $Y_2 = 200$

$$\textcircled{2.47 \text{ years}}$$

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$$\textcircled{5} A=P(1+r)^t$$

$$25 = 10(1+r)^1$$

$$r = 1.5$$

$$\textcircled{150\%}$$

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$$10(1+1.5)^x$$

$$Y_1 = 10(1+1.5)^x$$

2nd trace #1 $x=7$

b) $Y_2 = 1000$

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$$\textcircled{8} 1694 = 1400(1+r)^3$$

$$r = \quad Y_1 = 1694$$

$$Y_2 = 1400(1+r)^3$$

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$$\textcircled{15} \sqrt{25x^2 - 16y^2} \quad 25x^2 - 16y^2$$

$$(5x+4y)(5x-4y)$$

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7.2 Compounded and Continuous Interest

Compound Interest	Continuous Interest
$A = P \left(1 + \frac{r}{n}\right)^{nt}$	$A = Pe^{rt}$
n = the number of times that the interest is compounded during the year.	e = Euler constant, e is a number similar to pi, e ≈ 2.718281828 ...

Compound: interest on interest
 n = # of times per year compounded

monthly = 12
 daily = 365
 quarterly = 4
 annually/yearly = 1
 semi-annual = 2

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Example 1: Austin deposits \$450 into a savings account with a 2.5% interest rate compounded monthly. How much money will Austin have after 5 years?

$n = 12$ $P = 450$ $r = .025$
 $t = 5$

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

$$A = 450 \left(1 + \left(\frac{.025}{12}\right)\right)^{12(5)}$$

\$509.85

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Example 2: If Nick has \$20,000 now, how long will it take him to save \$50,000 in an account that carries an interest of 5.83% compounded quarterly?

$P = 20000$ $A = 50000$ $r = .0583$ $n = 4$

$$50000 = 20000 \left(1 + \frac{.0583}{4}\right)^{4x}$$

$$Y_1 = 50000$$

$$Y_2 = 20000 \left(1 + \left(\frac{.0583}{4}\right)\right)^{4x}$$

$t =$

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Example 3: Emily invested \$1250 in an account that had an interest rate of 0.5% compounded continuously. How long will it take her to reach \$1280?

$P = 1250$ $r = .005$
 $A = 1280$

$$A = Pe^{rt}$$

$$1280 = 1250 e^{(.005x)}$$

$$Y_1 = 1280$$

$$Y_2 = 1250 e^{(.005x)}$$

zoom 6

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Example 4: Analeigh is given the option of investing \$12,000 for 3 years at 7% compounded monthly or at 6.85% compounded continuously. Which option should she choose and why?

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