Algebra 1: 5.1 Guided Notes   Name _____ Period _____
Simple and Compound Interest

<u>**Simple and Compound Interest**</u>

Simple Interest

Compound Interest

<u>**Vocabulary and Formulas**</u>

   P: **Principal =**

   r: **Rate =**

   t: **Time =**

   A: **Amount =**

Simple Interest Formula:

Compound Interest Formula:

Suppose Nico deposits $1,000 into an account that earns 5% simple interest each year.
Suppose Raul deposits $1000 into an account that earns 5% compound interest each year.

   P =

   r =

Write the formula for each situation.

   <u>**Nico (Simple Interest)**</u>   <u>**Raul (Compound Interest)**</u>

1. Use the simple and compound interest formulas from the situations for Nico's simple interest account and Raul's compound interest account to complete the table. Round the values to the nearest cent.

Quantity	Time	Simple Interest Balance	Compound Interest Balance
Units			
Expression			
	0		
	1		
	2		
	8		
	100		

Which of these interest formulas is arithmetic and which is geometric? Why?

2. Terrell is looking for financial advice. He can deposit $1,000 into a simple interest account like Nico's, or a compound interest account like Raul's. The compound interest account costs him a one-time start-up fee of $200. The simple interest account is FREE. Where would you tell Terrell to put his money and why?

3. Graph the simple interest and compound interest functions on desmos.com. Then, sketch and label the graphs on the given grid.

$f(t) = 1000 + 50t$

$g(t) = 1000(1.05)^t$

X-Axis   add a label

$-5 \le x \le 40$ Step:

Y-Axis   add a label

$0 \le y \le 6000$ Step:

What kind of functions are these? Linear? Absolute Value? Exponential? Quadratic?

Check for Students' Understanding

Suppose that your family deposited $10,000 in an interest bearing account for your college fund that earns 4% simple interest each year and a friend's family deposited $10,000 in an interest bearing account for their child's college fund that earns 4% compound interest each year.

Use the simple and compound interest formulas to complete the table and round the values in the table to the nearest cent.

	Time	Simple Interest Balance	Compound Interest Balance
Units			
Expression			
	0		
	1		
	2		
	3		
	10		

How much money will you and your friend have in the college funds when you each turn 18 years old?