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## Review for IMIB CHAPTER 8 INDIVIDUAL TEST

1) For the sequence: $35,175,875,4375 \ldots$
a. What is the equation for this sequence?
b. What is the $12^{\text {th }}$ term in the sequence?
2) Peitra has $\$ 1,000$ to deposit into a bank. She puts the money into an account that earns simple interest of $8 \%$ each month.
a. How many dollars in interest does Peitra earn each month?
b. Write the equation.
c. How much money will she have in her account after 3 years ( 36 months)?
3) You have just been notified that you are the only living descendent of a math-lover, who put $\$ 1$ in a bank account in 1766 and left it. Since then, the money has been collecting interest. He left instructions in his will that in 2024, if he had any living descendant who could determine the exact amount of money in the bank, that person could have the money.

Here is the information: The $\$ 20$ was deposited in a bank account with an annual interest rate of $3 \%$. Since then, the interest has been compounded annually. As of 2024 (258 years later), how much money is in the account? Show all of your work clearly.
4) Solve each system of equations:
a. $\begin{array}{ll}4 x+y=8 \\ & x=5-y\end{array}$
b. $\quad y-2 x=-7$
$-4 y+3 x=8$
5) The table below represents an exponential function of the form $y=a b^{x}$. Complete the table below, and then write the equation for the function.

| $x$ | $y$ |
| :---: | :---: |
| -1 |  |
| 0 | 5 |
| 1 | 15 |
| 2 | 45 |
| 3 |  |
| 4 |  |

equation: $\qquad$
6) Lolly rushed inside the moment she got home, clearly very excited. When her mother asked her what was up, Lolly said "I got a great interest rate on my account at the bank!" she replied. "I'm going to figure out how much money I'm going to have if I leave it there for three years."

Then Lolly wrote: $\quad A=1500(1.0875)^{12}$
a. How much money did Lolly put into the bank?
b. What is Lolly's interest rate?
c. How much money will Lolly have at the end of the three years?
7) Solve each of the equations below.
a. $10+5 x+2=-3 x-8-2 x$

$$
\text { b. } 3 x(2 x+3)=2(x+2)(3 x-1)
$$

8) Write an equation in the form $y=a b^{x}$ for each exponential function below.
a.

equation:
b.

equation: $\qquad$
9) Fill out the table with at least 3 points found from each equation. Then draw an accurate graph of each function:
a. $y=18\left(\frac{1}{3}\right)^{x}$

b. $y=3(3)^{x}$

10) For each pair of triangles, decide whether or not they are congruent. If they are congruent, write the congruence statement and the congruence property (SSS, etc.) that proves it. If not, say "not enough information." NOTE: These are not drawn to scale! (4 pts)
a. $\triangle V X W \cong \Delta$ $\qquad$ by $\qquad$

b. $\triangle R S Q \cong \Delta$ $\qquad$ by $\qquad$

