8D Exponential Growth and Decay Nam	ne: Per:
SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CRE	EDIT. NO WORK IN PEN.
1. Given \$100, show what would happen if you multiply a. 15%b. 80%c. 100	y the amount by the following percentages. 0% d. 150% e. 200%
2. Explain which of the above makes the \$100 grow and	d why:
3. Determine the common ratio (sometimes called the n	multiplier) for each growth or decay rate.
a. 5% growth c. 30% growth	e. 1% decay g. 0.85% growt
b. 12% decay d. 98% decay	f. 30% decay h. 2.5% decay
4. $f(x) = (0.5)3^x$	5. $f(x) = 2.25^x$
a. CIRCLE: Growth OR Decay	a. CIRCLE: Growth OR Decay
b. Initial amount	b. Initial amount
c. Common Ratio/multiplier	c. Common Ratio/multiplier
d. Find $f(3) =$	d. Find $f(-3) =$
E.C. What's the percentage of decay/growth?	E.C. What's the percentage of decay/growth?
6. $f(n) = 2(1.01)^n$	7. $f(n) = 1.25(0.033)^n$
a. CIRCLE: Growth OR Decay	a. CIRCLE: Growth OR Decay
b. Initial amount or $f(0)$	b. Initial amount
c. Common Ratio/multiplier	c. Common Ratio /multiplier
d. Find $f(2) =$	d. Find $f(1) =$
E.C. What's the percentage of decay/growth?	E.C. What's the percentage of decay/growth?
Use the graph to answer the following questions. You mi	ight want to make a table ©
8. ^y	9.
Growth OR Decay	15 Growth OR Decay
Initial amount	Initial amount
10 Common Ratio	10 Common Ratio
Find $f(2) = $	Find $f(1) =$
5 Recursive Eq:	_ 5 Recursive Eq:
Explicit Eq:	Explicit Eq:
• E.C. % decay/growth?	0 E.C. %
0 5 10	0 5

10. Write an **explicit equation** and then calculate the expected price in the year 2018 if you assume 4% annual increase starting with the given price in 1988.

a. Big Mac, \$1.29

b. Movie Admission, \$5.00

Equation:_____

Expected price: _____

Expected price: _____

Equation:_____

11. E. coli bacteria double in population each hour and has an initial population of 85.

	h		Pattern		f(h)		S.	H.		y P								
	0								_									
	$\frac{1}{2}$								_									
	2																	
а	a.	Comp	ete the table.							_								
b	э.	What i	s the initial a	nount o	or $f(0)$?												
С	с.	Is this	an Arithmetic	OR G	eometri	c sequ	uence?		_	_								
Ċ	d.	What i	s the multipli	er/com	mon rat	io?				°		5		10		15		20
e	e.	Graph	your table to	show th	ne grow	th of	the bac	teria.										
f	f.	What i	s the explicit	equatio	on?			g. V	<u>Vh</u> at is t	he re	cur	sive	equ	atio	on?_			
h	n.	What's	s the population	on of ba	acteria a	after t	hree ho	ours?		_								
i	İ.	Find <i>f</i>	(10) =		What do	bes it	mean?											
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