Rubric for Practice Final

Problems 1 -28 are all or nothing unless otherwise indicated.

1.	$\begin{bmatrix} -2 & -2 \\ -2 & -2 \end{bmatrix}$	2 pts.	
2.	$x = -4, x = 2$ **or** $-4, 2$	2 pts.	Either form of the answer is acceptable
3.	5.8	3 pts.	Must have decimal rounded correctly
4.	$3^5 = x$	3 pts.	
5.	1	3 pts.	
6.	$x \neq 1, x \neq 2$	3 pts.	
7.	$(4,0)$	3 pts.	
8.	$(0, -2)$	3 pts.	
9.	$x = -1$	3 pts.	
10.	$y = x - 1$	3 pts.	
11.	$\begin{bmatrix} 1 & -2 & 1 & 9 \\ 0 & 1 & 1 & 0 \\ 1 & 0 & 3 & 2 \end{bmatrix}$	3 pts.	
12.	120	3 pts.	
13.	$y \neq 2$ **or** $x \neq 2$	3 pts.	Either form of the answer is acceptable
14.	$f^{-1}(2) = -1$	3 pts.	
15.	(b) and (c)	$+1$ pt	for one correct answer
		$+3$ pts	for both correct answers
		-1 pt	for each extraneous answer
			Minimum of 0 pts for the problem
16.	$(f \circ g)(1) = -1$	3 pts.	
17.	(a)	3 pts.	
18.	5	3 pts.	
19.	$a_3 = 2$	3 pts.	
20.	(b)	3 pts.	

21.	$3P = Pe^{0.07t}$ **or** $3 = e^{0.07t}$ **or** $t = \frac{\ln 3}{0.07}$		
		3 pts.	Any form of the answer listed above is acceptable
22.	$\frac{A}{x} + \frac{B}{x^2} + \frac{C}{x+2}$	4 pts.	Must have three fractions with the correct denominators. Can be in any order.
23.	$\begin{bmatrix} & \\ -5 & -9 \end{bmatrix}$	2 pts	for each correct answer, up to 4 pts
24.	15	4 pts.	
25.	(b)	4 pts.	
26.	$(-\infty, 5] \cup (-1,3]$	4 pts.	**All** brackets must be correct
27.	(a)	4 pts.	
28.	$\frac{15}{16}$ **or** 0.9375	4 pts.	

29.		7 pts	Graph is sketched perfectly

If the graph is not sketched perfectly

3 pts for **all** of the following:
- Correct number of vertical asymptotes are present on graph
- Correct type of non vertical asymptote present on graph
- Graph clearly demonstrates knowledge of asymptotic behavior

THEN

2 pts for **all** of the following:
- Correct x and y intercepts are present on graph
- No extraneous intercepts are present on graph

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30. 16,171

7 pts For correct answer with supporting work

0 pts For correct answer and no supporting work

If answer is not correct

3 pts for correct value of n OR 1 pt For naked formula for nth term

$$a_n = a_1 + d(n-1)$$

THEN

1 pt for naked sum formula: $S = \frac{n}{2}(a_1 + a_n)$

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31. $(4, -2, 1)$ **or** $x = 4, y = -2, z = 1$

7 pts For correct answer with supporting work, either form of the answer is acceptable

If answer is not correct

2 pts For manipulating matrix to triangular form with supporting work (may or may not be correct triangular form)

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32. $x = 1$

7 pts For $x = 1$ is the only answer with supporting work

If answer is not correct

4 pts For $x = 1$ and $x = -4$ with supporting work

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33. a) 116,407 bacteria

3 pts For finding k $k = \frac{1}{5}\ln 2$, can round value of k

2 pts For using value of k to find $N(48)$ Maybe some rounding errors in final answer if k was rounded

b) no 2 pts For answering "no"

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34. a) Far left point: x- value must be between 0 and -1; y-value must be between 1 and 2

Far right point: x- value must be between 1 and 2; y-value must be between 0 and -1

1 pt For each reasonable estimate for the ordered pairs, up to 2 pts

b) $\left(-\frac{2}{3},\frac{5}{3}\right)$ and $\left(\frac{5}{3},-\frac{2}{3}\right)$

5 pts For correct answer with supporting work

If answer is not correct

2 pts For valid algebraic substitution as first step

THEN

2 pts For correct numeric answers for first variable

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35. $f^{-1}(x)=\frac{3}{x-1}$ **or** $y=\frac{3}{x-1}$

5 pts For correct answer, either form of the answer is acceptable

If answer is not correct

2 pts For correctly changing x and y places

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36. $(-\infty,-1)\cup[2,\infty)$

8 pts For correct answer with supporting work

If answer is not correct

2 pts	For choosing correct Denominator to simplify	OR	3 pts	Correct restriction on domain
3 pts	For correct expression compared to zero		2 pts	For correct expression compared to zero