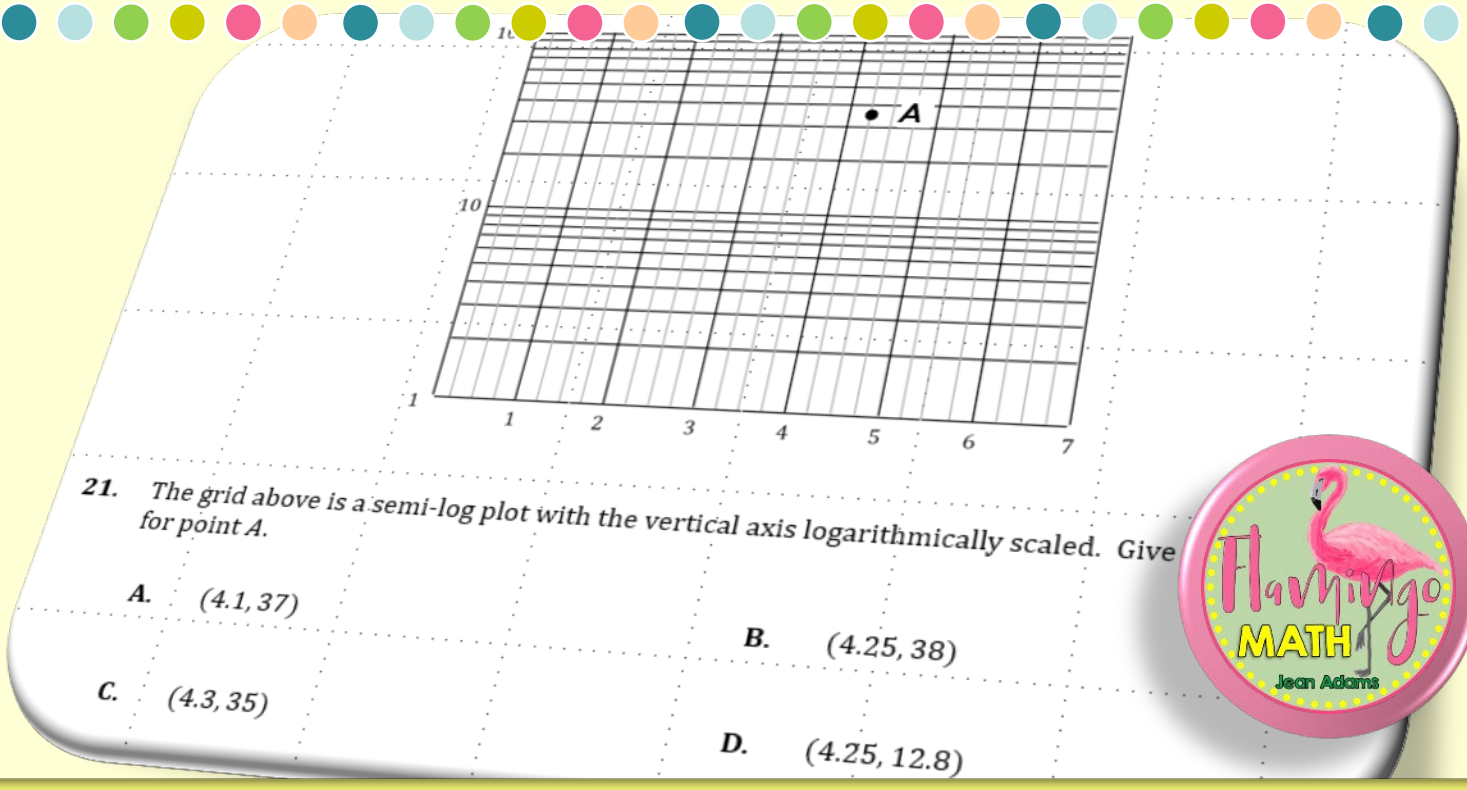
AP® Precalculus

Exponential and Logarithmic Functions

Multiple Choice Monday



Completely Editable

AP Precalculus Review
Unit 2 Multiple Choice Practice Sets

This **AP Precalculus Review** is made for your AP Precalculus students to gain proficiency in preparation for the AP Precalculus Exam for questions covering topics and learning objectives for ***Unit 2: Exponential and Logarithmic Functions.*** You will find a **set of 30 questions** and also includes an answer key.

Students will practice the following skills:

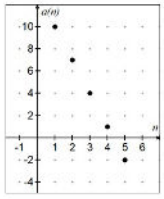
[2.1] Change in Arithmetic and Geometric Sequences
[2.2] Change in Linear and Exponential Functions
[2.3] Exponential Functions
[2.4] Exponential Function Manipulation[
2.5] Exponential Function Context and Data Modeling
[2.6] Competing Function Model Validation
[2.7] Composition of Functions
[2.8] Inverse Functions
[2.9] Logarithmic Expressions
[2.10] Inverses of Exponential Functions
[2.11] Logarithmic Functions
[2.12] Logarithmic Function Manipulation
[2.13] Exponential and Logarithmic Equations and Inequalities
[2.14] Logarithmic Function Context and Data Modeling
[2.15] Semi-log Plots

Teaching Suggestions:

- Use the set as a group activity or station rotation in preparation for the exam.
- Use as a homework assignment during Test Prep
- Use as warm-up exercises during the year to keep content current

© Jean Adams Flamingo Math, LLC https://www.flamingomath.com/shop/

AP Precalculus Review
Unit 2 Multiple Choice Practice Set



8. Values of the terms of an arithmetic sequence a_n are shown in the graph above. Which of the following is an expression for the nth term of the arithmetic sequence?

(A) $a_n = 13 - 3(n-1)$

(B) $a_n = 10 - 3(n-1)$

(C) $a_n = 10 + 3(n-1)$

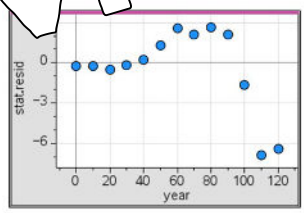
(D) $a_n = 13 + 3(n-1)$

9. The value of the Super X-Jet Ski is modeled by the fun… The v… to decrease by 12% each year. At time $t = 0$ years, the val… the following expressions gives the value of the … [Note: There are 12 months in a year.]

(A) $23{,}400(0.12)^{…}$

(B) $23{,}400(…88)^{…}$

(C) $23{,}400(…8)^{…}$



15. In the years from 1900-2020, the US Population for people aged 65 and over has been increasing. An exponential regression was used to develop a model for the population. The figure above shows a graph of the residuals of the exponential regression. Which of the following statements about the exponential regression is true?

(A) The residual plot has no apparent pattern, so the exponential model was not appropriate.

(B) The residual plot has no apparent pattern, so the exponential model was appropriate.

(C) The residual plot displays a pattern, so the exponential model was not appropriate.

(D) The residual plot displays a pattern, so the exponential model …

t (weeks)	0	1	…	…
$C(t)$	16	32	…	64.75

16. …ing function C … the number of followers, in thousands, for a cruise ship … media. The table above gives the values of $C(t)$ for selected values of t, in … Which of the following

t years since 2020	0	1	2	3
Population P	4.833	5.017	5.174	5.301

25. The table above shows the population P, in thousands of endangered birds introduced into a new protected bird sanctuary, for the years $2020 - 2023$. A linear regression $y = a + bx$ is used to model the function P. What is the residual for the number of birds, in thousands, in the year $2023\ (t = 3)$?

A. 0.0192

B. −0.0156

C. 0.0148

D. 5.3156

x	$h(x)$
116	1
58	2
29	3
$\frac{29}{5}$	4
…	…

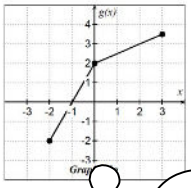
26. …values … function … the table above. Which of the following claim and … is best. Is the …

(A) … is best modeled by an exponential function because the outputs over consecutive equal-length input-value intervals are proportional.

(B) h is best modeled by an exponential function because the inputs over consecutive equal-length output-value intervals are proportional.

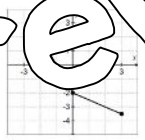
(C) h is best modeled by a logarithmic function because the outputs over consecutive equal-length input-value intervals are proportional.

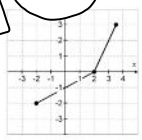
(D) h is best modeled by a logarithmic function because the inputs over consecutive equal-length output-value intervals are proportional.



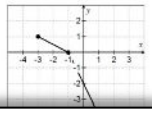
12. The graph of the function g consists of … seg… … following is the graph of $g^{-1}(x)$, the … g …

(A)

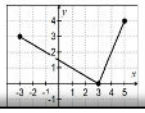




(C)



(D)



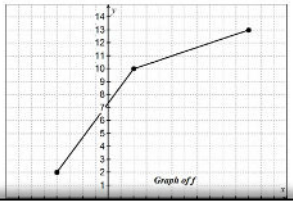
17. Let k, w, and z be positive constants. Which of the following is equivalent to $\log_2\left(\frac{kw^2}{z^4}\right)$?

A. $\log_2(k + 2w) - \log_2(4z)$

B. $\log_2 k + 2\log_2 w - 4\log_2 z$

C. $\log_2 k + \frac{1}{2}\log_2 w - \frac{1}{4}\log_2 …$

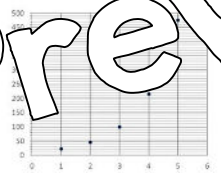
D. $\log_… \log_2$

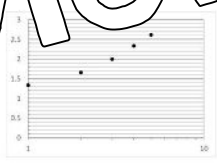


x	1	2	3	4	5
$g(x)$	22	46	100	215	475

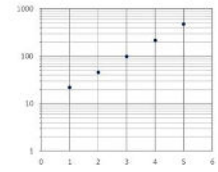
30. The table above gives selected values for the function g. … of the following graph… represent these data in a semi-log plot, where the vertical … is logarithmic?

A.

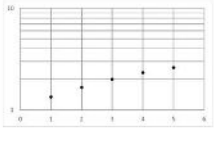




C.



D.



Preview
Preview
Preview
Preview
Preview
Preview