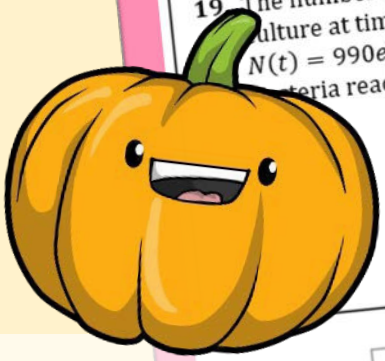
Logarithmic Functions

17. An object whose temperature is 72°F is placed in a refrigerator where the temperature is a constant 38°F. The equation from Newton's Cooling Law can predict how long, in minutes, for the temperature to drop to 45°F.
$45 = 38 + (72 - 38)^{-0.2176t}$.
How long will it take?

18. Use $P = P_0\left(1 + \frac{r}{n}\right)^{nt}$.
How long will it take, in years, for $10,000 to grow to $15,000 if it is invested in an account earning 3.2% interest compounded monthly?

19. The number N of bacteria present in a culture at time t (in hours) obeys the model $N(t) = 990e^{0.01t}$, when will the number of teria reach 2000?

20. The population of a colony of mosquitoes obeys the law of uninhibited growth. $N(t) = N_0e^{kt}$. If there are 1000 mosquitoes initially and 1800 after 1 day, find the value of k, the rate of growth.

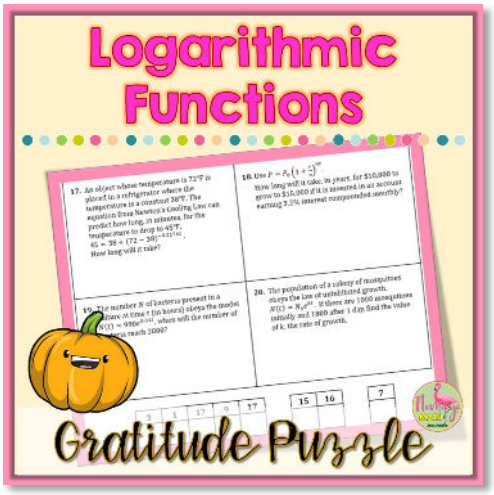


3	1	17	9	17	15	16	7		

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Gratitude Puzzle

Logarithmic Functions Gratitude Puzzle



KEY CONCEPTS/TOPICS:

Review of logarithmic properties, functions and graphs, and application questions

GENERAL DIRECTIONS:

Your PreCalculus students will have a set of 20 question stems related to the unit on logarithmic functions and graphs. Their answers will help solve a quote about "*gratitude*."

About The Product

Logarithmic Functions Gratitude Puzzle

This resource is designed to help your students gain proficiency in their ability to master the concepts and properties of logarithmic functions, equations and graphs. When completed, students will have clues to a quote on gratitude for Thanksgiving week.

There are 20 question stems in the activity:

1. As a unit review
2. As a cooperative activity with a partner.

Learning Standards:

CCSS: HSF.BF.A.1.B, HSF.LE.A.1.C, HSF.LE.A.2; HSF.LE.A.4; HSA.REI.D.11, HSF.IF.C.7.E
TEKS: P.1.A, P.1.D, P.1.G, P.2.F, P.2.G, P.2.I, P.2.J, P.2.N, P.5.G

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About this Activity:

This resource is designed to help your Algebra 2 Honors and PreCalculus students gain proficiency in their ability to master the concepts and properties of logarithmic functions, equations and graphs. When completed, students will have clues to a quote on gratitude for Thanksgiving week.

There are 20 question stems in the activity:

1. As a unit review
2. As a cooperative activity with a partner

Learning Standards:

CCSS: HSF.BF.A.1.B, HSF.LE.A.1.C, HSF.LE.A.2; HSF.LE.A.4; HSA.REI.D.11, HSF.IF.C.7.E

TEKS: P.1.A, P.1.D, P.1.G, P.2.F, P.2.G, P.2.I, P.2.J, P.2.N, P.5.G

The activity provides space for students to support their answers.

Teachers will have an answer key and solutions.

This is an engaging and fun approach to review Logarithmic Functions, Graphs and Applications

Thank you for supporting my work!



Jean

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Jean Adams

Product Pages

www.FlamingoMath.com

Logarithmic Functions
Thanksgiving Puzzle

Name _____
Date _____ Period_____

Solve all 20 questions to find a letter that corresponds to your problem. Continue in the fashion until you complete the activity and find the quote in the puzzle.

1. Condense the expression. $\log_2(4xy^2) - \log_2(16xy)$

2. Find $A + B$

$$\log_3 x\left(\frac{9x^2}{y}\right) + \log_3(3xy) = \log_3(Ax^B)$$

3. Solve for x:

$$3\log_b 3 + \log_b 4 - \frac{1}{2}\log_b 81 = \log_b x$$

4. Solve for x: $2\ln(x-5) = 4$

5. Solve for x: $3^{5x} = 7$

6. Simplify: $\ln\sqrt[5]{e^3} + \ln e^2 + \ln e^0$

Answer	
$\frac{23}{2}$	R
-4	C
12	T
$\frac{2}{7}$	A
7.263	E
30	L
70.320	J
-9	Q
5	Y
$\log_2(y) - 2$	H
15.086	S
$\frac{\ln 7}{5\ln 3}$	M

7. Solve for x:

$$\left(\frac{64}{25}\right)^{4x} = (8\cdot 5^{-1})^{x+2}$$

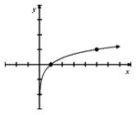
8. Solve for w:

$$\frac{e^{-6}}{e^w} = e^3$$

9. Expand the expression below to $\frac{1}{2}\ln Ax - B\ln y^C$, to find $A + B + C$.

$$\ln\sqrt{\frac{18x}{3y^5}}$$

10. Use the graph of $f(x) = \log_b x$ below, what is the value of b ?



11. Solve for b: $\log_b 5 - \log_b 3^3 = \log_3 \frac{1}{9}$

12. State the domain of $g(x) = 3 + \ln(5-x)$

14. Given two functions $f(x) = 7 + \log_2 x$ and $g(x) = 2^{x-5}$. What is the value of $f(g(13))$?

our answer. Round to nearest hundredth.

16. Find the zero of $h(x) = \ln(x+5) - 3$

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3	1	17	9	17		15	16		7

13	7	2	5	18	17	16	16		3	20	7

2	15	11	17		2	15	4	17	12	15	18

14	9	7	3	15	3	6	12	17	,

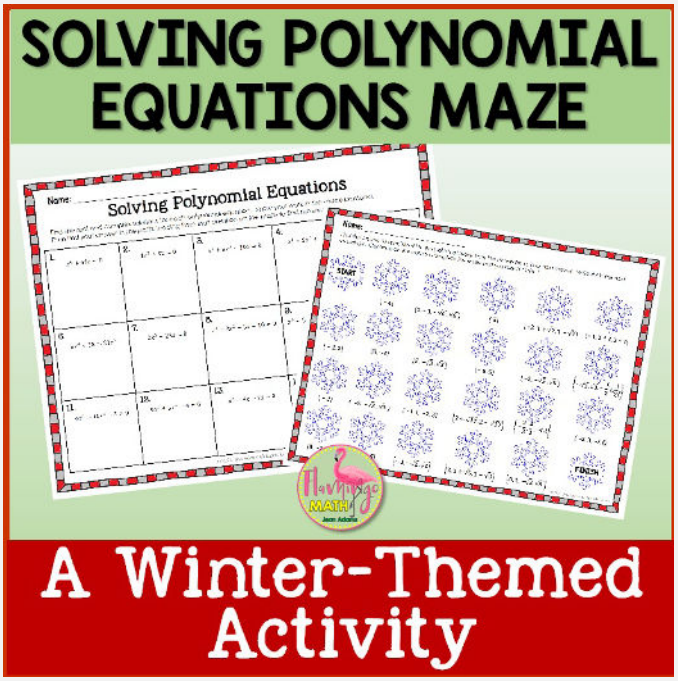
7		8	6	15	17	3		19	20	10

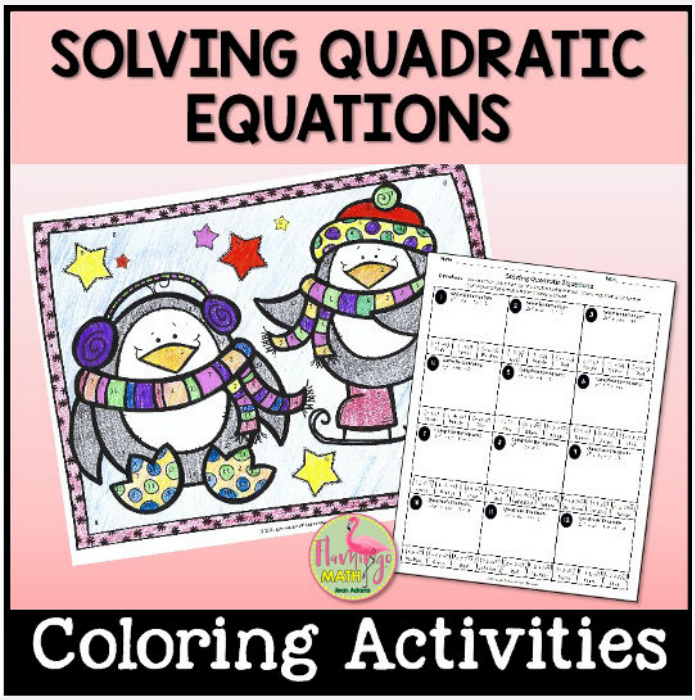
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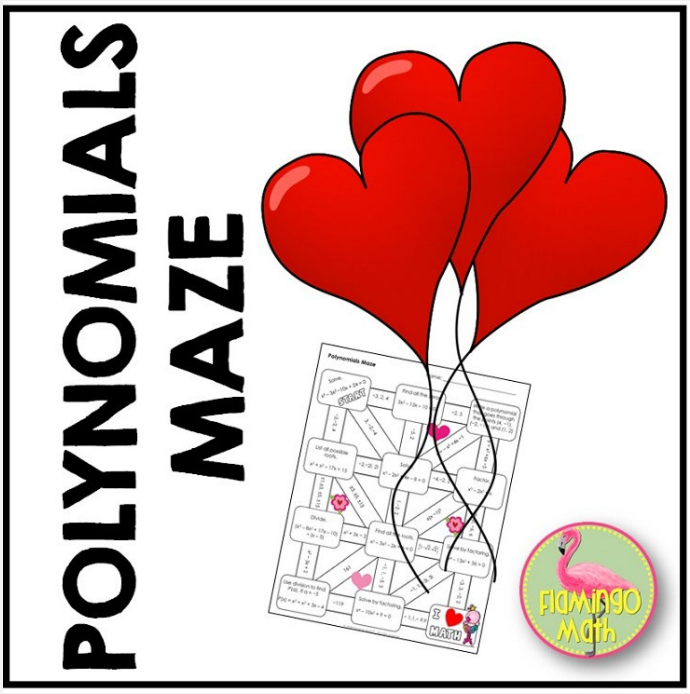
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