

Jeopardy Screen #1 Questions and Answers

What's My Line?	Max or Min	Function Fun	Grow or Decay	Translate this...	Forward or Inverse
An equation of a line is $6x-2y=12$. What is the slope of the line? : $m = 3$	Describe the direction and relative width of $f(x) = 2x^2 - 3x + 7$: parabola opens upward and is more narrow than $y = x^2$	Does the graph shown represent a function? : No, it fails the vertical line test.	Is the graph of $y = (1/2)^x$ an increasing or decreasing function? Describe how you know. : graph is decreasing since base $(1/2)$ is < 1 .	What is the equation of the basic graph shown? : $y = \text{cube root of } x$	Write the inverse of the function shown in the table above. : swap ordered pairs to $(7, 1), (-5, 0), (3, 2), (0, 3)$
The slope between the points $(4, 2)$ and $(-1, 3)$ is : $m = -1/5$	Give the equation of a parabola that has x-intercepts of $(-4, 0)$ and $(7, 0)$: $y = (x + 4)(x - 7) = x^2 - 3x - 28$	Evaluate $g(-2)$ if $g(x) = 1/2x + 3$: $g(-2) = 2$	If the number of rats t days after an earthquake is given by $P(t) = 5(2)^{t/30}$, how many rats were present immediately after the earthquake? : rats = 5	Describe the graph of $f(x) = (x + 3)^2$: parabola with minimum vertex point at $(-3, 0)$	Will the inverse of the function shown in the graph be a function? : No, it fails the horizontal line test.
The equation of the line represented by the table is : $y = 1/2x + 4$	What is the vertex of $f(x) = 3(x - 2)^2 + 5$? : vertex = $(2, 5)$	Evaluate $f(2)$ given the graph above. : $f(2) = 4$	If the number of rats t days after an earthquake is given by $P(t) = 5(2)^{t/30}$, find $P(90)$ and interpret the result. : after 90 days there are 40 rats	Write the equation of the graph shown. : $y = \text{abs}(x - 2) - 3$	Given the function shown, find $F^{-1}(3)$: = 2
For the equation $2x + 6y = 18$, find the x- and y-intercepts. : x-int = $(9, 0)$, y-int = $(0, 3)$	Find the x-intercepts of $f(x) = 2x^2 + 5x - 3$: $(1/2, 0)$ and $(-3, 0)$	Evaluate $h(1)$ given the function above. : $h(1) = 2$	Solve for x : $35 = 20e^{1.3x}$: $x = 0.43$	Describe the graph of the function $f(x) = -3/(x+1)^2$. : rational function w/ VA at $x = -1$, HA at $y = 0$, y-int at $(0, -3)$, and no x-int.	Find the inverse of $f(x) = 2x^3 + 5$. : inverse in y-form is cube root of $[(x - 5)/2]$
An 8-foot Christmas tree costs \$70, and a 6-foot Christmas tree costs \$50. Write an equation for the cost of the tree in terms of its height, if the cost of trees is linear. : $y = 10x - 10$	A holiday fruitcake is tossed out of a window. Its distance from the ground is given by $h(t) = -16t^2 + 32t + 30$. What is the maximum height the fruitcake reaches? : 46 feet	Sketch the graph of the function $h(x)$: $h(x) = \{(x + 2)^2 \text{ if } x < 0, \text{ or } -3x \text{ if } x \geq 0\}$	There are 4 rats in a lab. The population will triple every 40 days. Write an equation that gives the number of rats after t days. : $P(t) = 4(3)^{t/40}$	Sketch the graph of the function $f(x) = 2\text{sqrt}(x-1) + 4$: translation of basic square root graph to initial point of $(1, 4)$ w/ scale factor of 2.	Sketch the inverse of the graph. : inverse is a line w/ y-int of $(0, 1.5)$ and x-int of $(-3, 0)$

Jeopardy Screen #2 Questions and Answers

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Higher Orders	Be Rational	Old Logs	Discriminant	Domain and Range	What's this for?
<p>Find the degree of $P(x) = (x + 1)^4(2x - 1)^3$. :the degree is 7</p>	<p>Where does the graph of $f(x)$ have vertical asymptote(s)? : $x = 1, x = -3$</p>	<p>Find the $\log(237)$. : 2.37</p>	<p>In algebraic form, the discriminant is written as: : $b^2 - 4ac$</p>	<p>Identify the domain and range for the function $f(x) = 2^x$. : all real numbers for the domain, greater than zero for the range</p>	<p>On the TI-83, "Zoom 6" : shows the standard graphing window</p>
<p>Describe the end behavior of $P(x) = (x + 1)^4(2x - 1)^3$ left arm down and right arm up</p>	<p>Where does the graph of $f(x)$ have a horizontal asymptote? : $y = 0$</p>	<p>Evaluate: $\log_3(49)$: 2</p>	<p>The number of real solutions to a quadratic equation when the discriminant = 0 : one solution</p>	<p>Identify the domain and range for the function $f(x) = 1/x$. : all real numbers except zero for both</p>	<p>On the TI-83, "2nd Trace, Option 5, Enter, Enter, Enter" : finds the intersection of two graphs</p>
<p>Find the x-intercepts and describe the behavior of the graph at each one. $P(x) = (x-2)(x+3)^3(x-1)^2$: crosses at $x=2$, crosses at $x=-3$, bounces at $x=1$</p>	<p>Identify the asymptotes of the graph shown. : VA is at $x = -1$, HA is at $y = 3$</p>	<p>Rewrite in logarithmic form: $3^y = h$: $\log_3 h = y$</p>	<p>The number of x-intercepts on a graph when the discriminant equals -9 : no x-intercept</p>	<p>Identify the domain and range for the function $f(x) = \log_2(x)$: D is >0, R is all real numbers</p>	<p>On the TI-83, "2nd Window" and "2nd Graph" : used to set up a table and to view the table</p>
<p>Sketch the graph of $P(x) = -(x + 4)^2(x - 1)^3$: crosses at $x=1$ and bounces at $x=-4$ and is flipped over because of the neg in front. $y_{int} = +16$</p>	<p>Sketch the graph of the function $f(x) = [1/(x+2)] - 1$</p>	<p>Solve for x: $\log_3(x - 5) = 4$: $x = 86$</p>	<p>In the equation $4x^2 - 4x - 1 = 0$, the value of the discriminant is: : 32</p>	<p>Identify the range for the function $f(x) = -2(x - 5)^2 + 1$: (neg infinity, 1]</p>	<p>$x_v = -b/2a$: finds the x-coordinate of the vertex of a parabola</p>
<p>Write the equation of the graph shown. : $y = -x^2(x+2)(x-4)$</p>	<p>Suppose the rat population (in 100s per acre) is given by $P(x)$. Find the HA and interpret its meaning in the context of the problem. : $y=5$</p>	<p>Solve for x: $2 \ln(5x + 2) - 12 = 8$: $x = 4404.89$</p>	<p>In solving a quadratic equation, where there are two different factors, the value of the discriminant would have this kind of value. : positive</p>	<p>Given $[-2, 5]$ as the domain for $f(x) = x^2 - 9$, determine the range : $R = [-9, 16]$</p>	<p>$y = k/x$ format for an inverse variation problem</p>