

Logarithmic, exponential, rational and radical functions



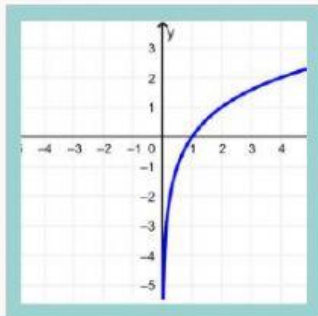
Ninth grade

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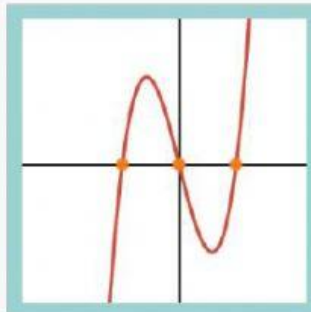
Student: _____

1. Indicate whether or not it is a logarithmic function

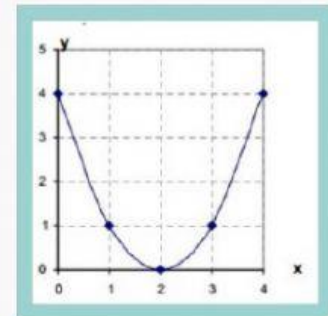
a)



b)



c)



2. Relate the logarithmic function with its respective graph (join).

$\log_5(4x + 1)$	$\log_2(x + 1)$
A red curve on a Cartesian coordinate system. The curve passes through the point (0, 0) and increases as x increases, characteristic of a logarithmic function.	A red curve on a Cartesian coordinate system. The curve passes through the point (0, 0) and increases as x increases, characteristic of a logarithmic function.

3. Indicate whether or not the following functions are exponential functions

a) $f(x) = 3^x$

b) $g(x) = \left(\frac{2}{3}\right)^x$

c) $h(x) = x^2$

d) $y = 3^4$

4. Find the vertical, horizontal or oblique asymptotes of the following rational functions.

1

$$f(x) = \frac{4x+2}{x+2}$$

AV:

AH:

AO:

2

$$f(x) = \frac{x+2}{x^2-1}$$

AV:

AH:

AO:

3

$$y = \frac{x^2-4x+5}{x-3}$$

AV:

AH:

AO:

5. Calculate the cut points with the "x" and "y" axes, domain and range, of the following rational functions

$$y = \frac{1}{x+2}$$

X axis:
Y axis:
Domain:
Range:

$$y = \frac{x}{1-x}$$

X axis:
Y axis:
Domain:
Range:

6. Based on the presentation of the radical function, list the steps to construct the graph of the radical function.

Tabla de valores	
$c^+ = f(x) = y > 0$	
$c^- = f(x) = y < 0$	
$f(x) = 0$	
$x = 0$	
$\sqrt{?} \geq 0$	

7. Indicate whether or not it is a radical function

$$f(x) = 4x^3 + 2x^2 + 5$$

$$f(x) = -3x^2 + 8$$

$$f(x) = \sqrt{x + 5}$$

8. Does the graph correspond to the radical function?

