

Exponential Odds and Ends

Which table row represents data points on the graph of an exponential function?

x	-2	-1	0	1	2
Q	-	-	-	3.7	4.7
R	4	2	0	-2	-4
S	-32	-1	0	1	32
T	0.01	0.1	1	10	100

Which table is an exponential function?

x	y
1	1
2	4
3	9
4	16
5	25

x	y
1	2
2	4
3	8
4	16
5	32

x	y
0	1
1	4
2	7
4	13
5	16

Solve for x

$$2^{x+4} = 16^{x-20}$$

$$3^{2x+5} = 27^{x-2}$$

$$8^{x+3} = 16^{x-12}$$

$$25^{x+15} = 125^{x+8}$$

$$4^{x+7} = 16^{x-23}$$

$$64^{x+4} = 16^{x-20}$$

Shifts of Exponential Functions

$f(x) = 2^{x+5} - 4$ Range: $y > -4$	$f(x) = 2^{(x-3)} + 2$ Range:	$f(x) = 3^{x+6} - 7$ Range:
$f(x) = 2^{x-2} + 1$ Range:	$f(x) = 2^{x+8} + 6$ Range:	$f(x) = 2^{x+5} - 4$ Range:

Warm-Up

$$2^{x+8} = 600$$

$$e^{x+8} = 506$$

$$4 \cdot 2^{x+8} + 6 = 186$$

$$y = 2^{x+8} + 6$$

Find the Inverse

$$y = e^{x-4} + 2$$

$$f(x) = \log 3x$$

$$f(x) = \ln 2x$$

$$f(x) = \ln(5x) - 6$$

$$f(x) = \log(x + 4) - 6$$

How long to double \$2000 at 3.2% compounded monthly?

$$6000 = P(1 - .08)^6$$

$$60 = 30(1 + r)^9$$

$$15 = 45e^{-.12t}$$

Honors: A house was worth \$190,000 on July 1, 1997. It was worth \$300,000 on July 1, 2007. The owner pays a property tax of 2.6% of the value of the house. Assuming a constant annual rate of increase in value, how much did the owner pay when she paid the property tax on July 1, 2002?