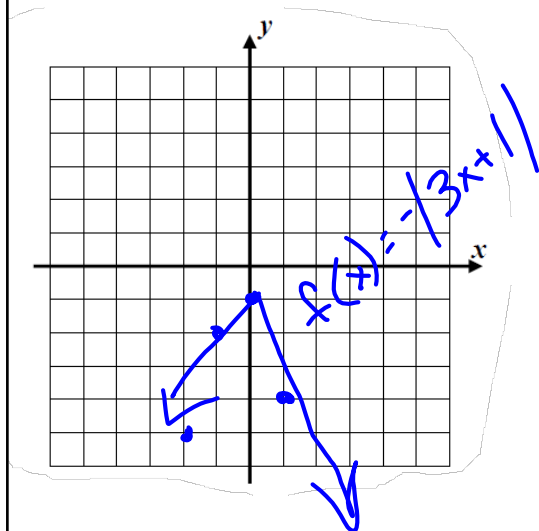


## Do Now

Graph  $f(x) = -|3x + 1|$

Create a table of values and graph



x	y
-3	-8
-2	-5
-1	-2
0	-1
1	-4
2	-7
3	-10

Jan 26-12:49 AM

## Homework Answers

- |      |       |
|------|-------|
| 1) C | 6) C  |
| 2) D | 7) B  |
| 3) A | 8) D  |
| 4) D | 9) C  |
| 5) A | 10) A |
|      | 11) B |

Jan 11-7:15 AM

## Exponential Functions

Evaluate the following:

$$1) 2^2 = 4$$

$$2) 2^3 = 8$$

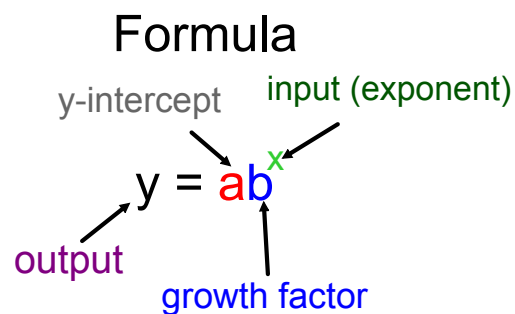
$$3) 2^4 = 16$$

$$4) 2^5 = 32$$

Dec 21-11:21 AM

## Exponential functions

Functions in which the exponent is the variable. These grow or shrink very quickly!

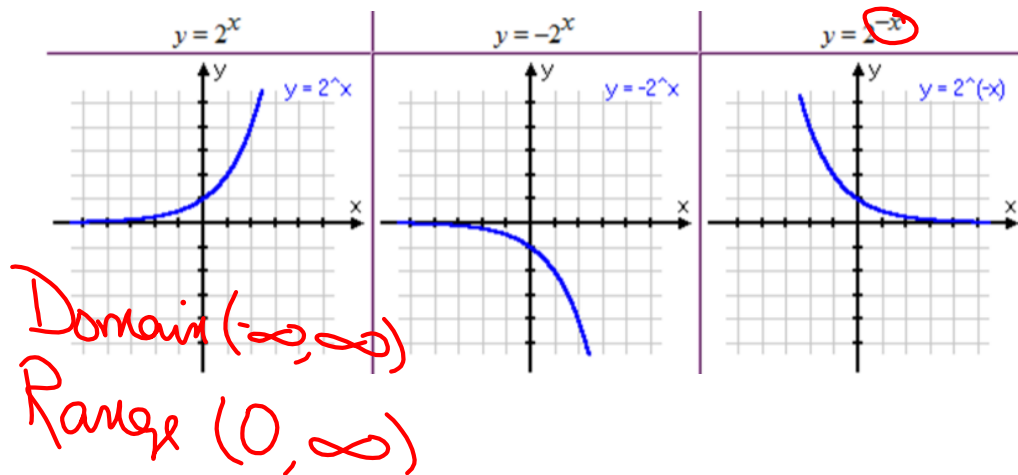


Dec 21-11:21 AM

## Exponential Functions

-a function in the form  $f(x) = a \cdot b^x$ , where  $a \neq 0, b > 0, b \neq 1$   
 -is a non-linear function

Examples :



Jan 2-6:36 PM

Exponential Growth:  $b$  is a number greater than 1 ( $b > 1$ )

EX:  $\frac{1}{2}(2)^x$ ,  $4(1.8)^x$ ,  ~~$\frac{3}{2}$~~   $\left(\frac{3}{2}\right)^x$

Exponential Decay:  $b$  is a number greater than 0 and less than 1 ( $0 < b < 1$ )

EX:  $5(.2)^x$ ,  $3\left(\frac{1}{2}\right)^x$

Mar 3-8:32 AM

Identify if each of the following are exponential growth or exponential decay.

1.  $f(x) = 8(.6)^x$

$b = .6$   
Decay

2.  $f(x) = 6(1.4)^x$

$b = 1.4$   
Growth

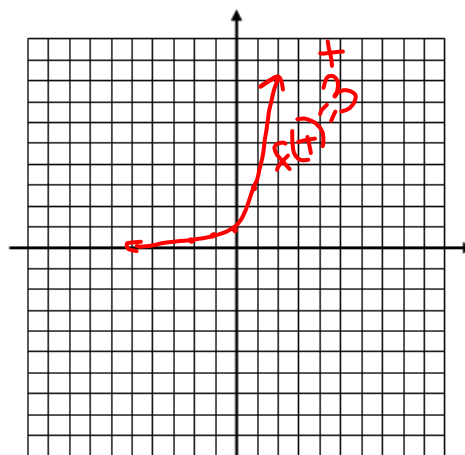
Jan 4-6:30 AM

### Exponential Functions

Variable (x) is in the EXPONENT

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

$x$	$f(x)$
-2	.1 or $\frac{1}{9}$
-1	$\frac{1}{3}$ or $\frac{1}{3}$
0	1
1	3
2	9



Domain:  $(-\infty, \infty)$

Range:  $(0, \infty)$

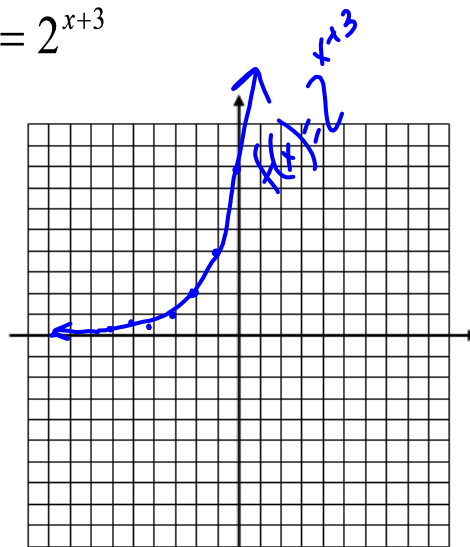
Apr 23-7:36 AM

Exponential Functions

Variable (x) is in the EXPONENT

$$f(x) = 2^{x+3}$$

x	f(x)
-6	.125
-5	.25
-4	.5
-3	1
-2	2
-1	4
0	8



Domain:

Range:

Apr 23-7:36 AM