7.4 Parent Functions

Warm-Up Monday

Find the equation of the line passing through (1,1) and (100,100)

$x_1, y_1 \quad x_2, y_2$

$m = \frac{100-1}{100-1} = 1$

$y - y_1 = m(x - x_1)$

$y - 1 = 1(x - 1)$

$y + 1 = x + 1$

$y = x$

About Me

1. Would you rather be the smartest person or the most attractive person?

2. Would you rather be a doctor or a lawyer?

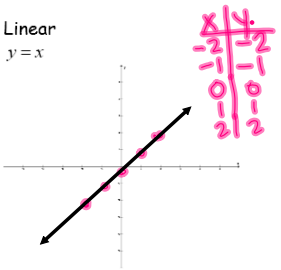
Concavity: ∪ ∩ up/down

Increasing/Decreasing: ↑ go up from left to right ↓ goes down from L to R dec inc

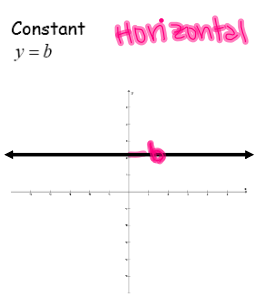
Symmetry: ✱ symmetric across y-axis (even) ✱ symmetric about the origin (odd)

Parent Functions:

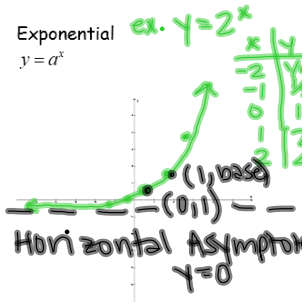
Linear
$y = x$



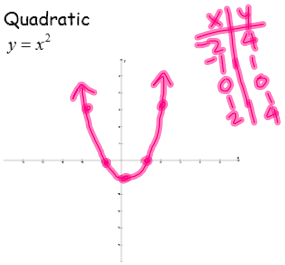
Constant
$y = b$ Horizontal



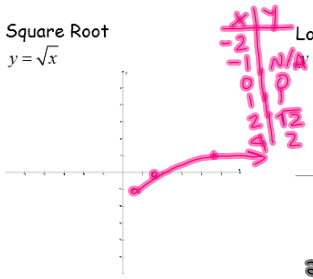
Exponential
$y = a^x$ ex. $y = 2^x$



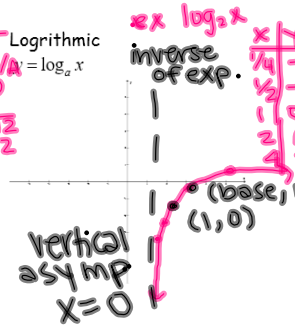
Quadratic
$y = x^2$



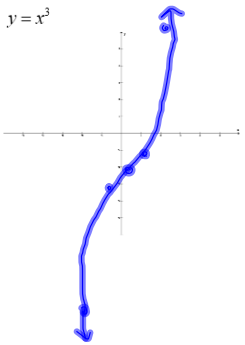
Square Root
$y = \sqrt{x}$



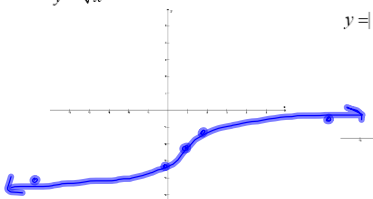
Logrithmic
$y = \log_a x$ ex $\log_2 x$ inverse of exp.



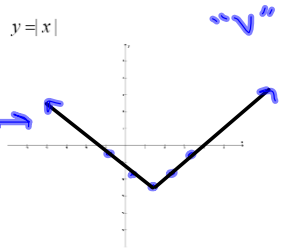
Cubic
$y = x^3$



Cube Root
$y = \sqrt[3]{x}$



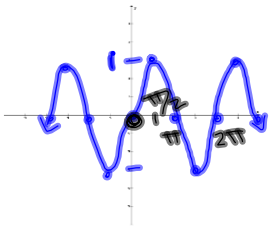
Absolute Value
$y = |x|$ "V"



Sine

$y = \sin x$

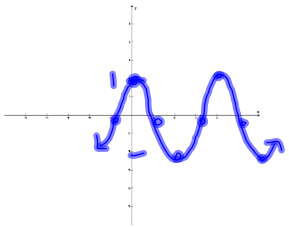
mid (0,0)



Cosine

$y = \cos x$

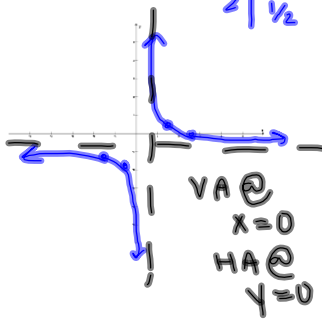
top (0,1)



Rational

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

x	y
-2	-½
-1	-1
0	UH
1	1
2	½



VA @ x=0

HA @ y=0

Transformations:

flip

f(-x) reflect over y-axis

-f(x) reflect over x-axis

shifts

f(x) + a

+ → up

− → down

f(x − a)

+ → left

− → right

"x is a liar"

2f(x)

$\frac{1}{2}f(x)$

compressi

f(2x)

stretch

$f(\frac{1}{2}x)$

7.4 Parent Functions

Get your device (and leave your notes)

Quizlet live time!!

https://quizlet.com/_4cfzws

z

7.4 Parent Functions

Exit Ticket

on google classroom