

$$X^m \cdot X^n = X^{m+n}$$

$$X^{-m} = \frac{1}{X^m} \text{ or}$$

$$\frac{X^m}{X^n} = X^{m-n}$$

$$\frac{1}{X^{-m}} = X^m$$

$$(X^m)^n = X^{mn}$$

$$X^0 = 1$$

$$(xy)^m = x^m y^m$$

$$X^{m/n} = \sqrt[n]{X^m}$$

$$2^x$$

Exponential Function

$$f(x) = 2^x$$

$$1) f(x) = 2^x \quad f(-3.1) = 2^{-3.1} = 0.1166$$

$$2) f(x) = 2^{-x} \quad f(\pi) = 2^{-\pi} = 0.1133$$

$$3) f(x) = 0.6^x \quad f\left(\frac{3}{2}\right) = 0.6^{\frac{3}{2}} = .4648$$

$$4) f(x) = e^x \quad f(-2) = .1353$$

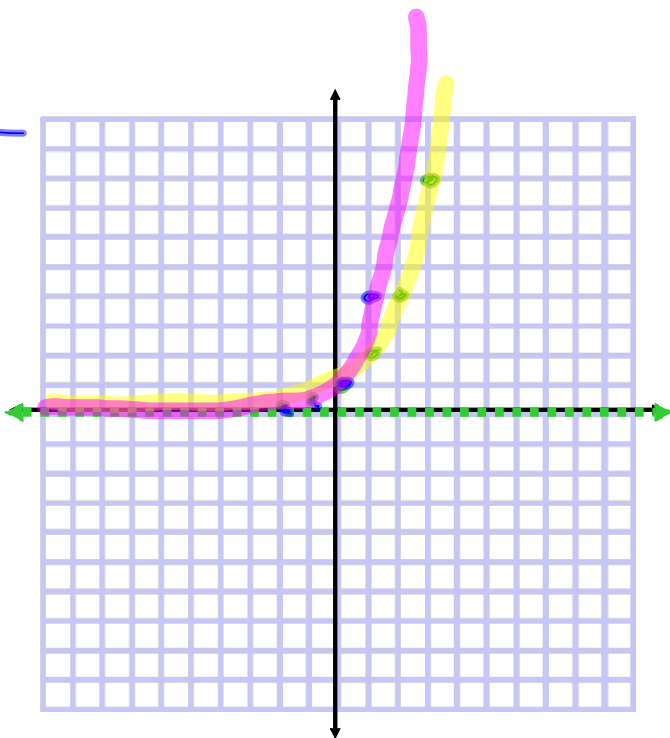
$$f(.25) = 1.2840$$

$$f(-0.4) = .6703$$

$$f(x) = 2^x$$

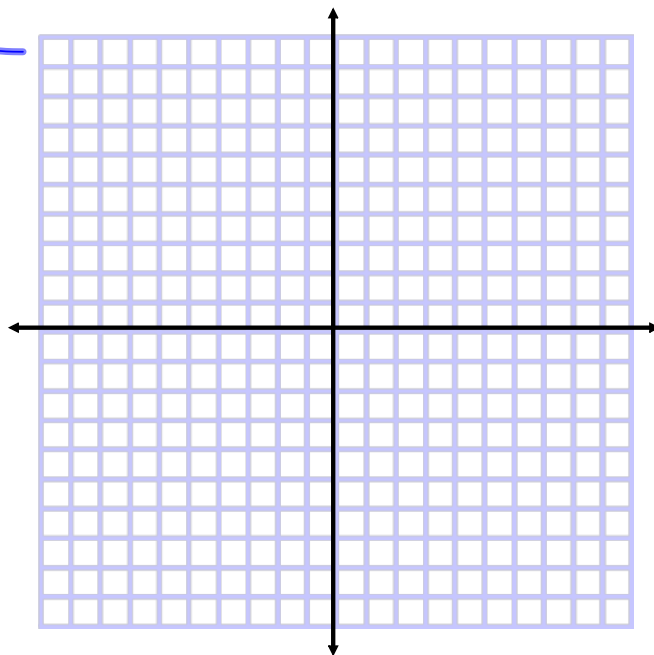
$$f(x) = 4^x$$

x	2^x	4^x
-2	$\frac{1}{4}$	$\frac{1}{16}$
-1	$\frac{1}{2}$	$\frac{1}{4}$
0	1	1
1	2	4
2	4	16
3	8	64



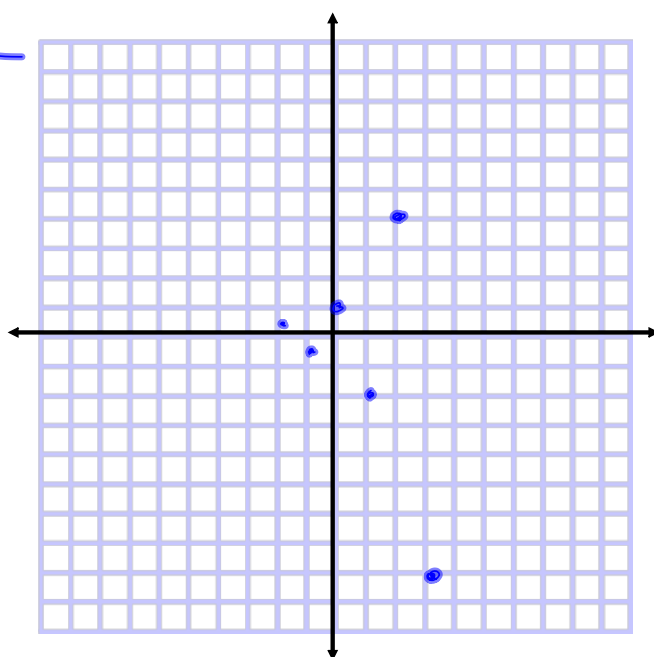
$$\frac{1}{2} = 2^{-1}$$

x	$\frac{1}{2}^x$	$\frac{1}{4}^x$
-2	4	16
-1	2	4
0	1	1
1	$\frac{1}{2}$	$\frac{1}{4}$
2	$\frac{1}{4}$	$\frac{1}{16}$
3	$\frac{1}{8}$	$\frac{1}{64}$



$$\frac{1}{2} = 2^{-1}$$

x	$(-2)^x$
-2	$\frac{1}{4}$
-1	$-\frac{1}{2}$
0	1
1	-2
2	4
3	-8



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

exponential growth

$$a > 1$$

exponential decay

$$0 < a < 1$$

'a' cannot be equal to 1 or any negative #

Pg 185-187

2-6 even

24-28 even

32, 34, 71, 74, 76