

# 10/22 Notes

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$$y = a(b)^x$$

$\uparrow$                      $\uparrow$   
 SN                    base

## Warm up

1. your car is worth \$20,000 when you buy it but depreciates value by 5.2% every year.

a) what's the exponential function?

b) how much is your car worth after 5 years?

2.  $y = 10(1.05)^x$

a) what's the starting value?

b) what's the percent growth or decay?

3.  $y = 15(0.92)^x$

a) what's the base?

b) what's the percent growth or decay?

## Exponential Graphing & Solving

• if you're given  $x$  & looking for  $y$ , you can solve for that.

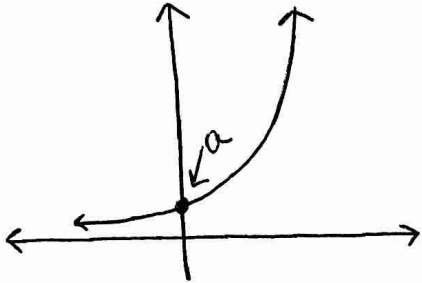
• if you're given  $y$  & looking for  $x$  right now you have to graph & find the intersect

**ex** In how many years will your car be worth 7,000 from the warm up above?

## Basic Graph

growth

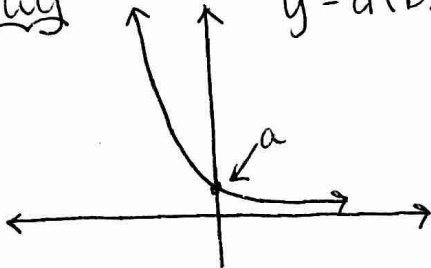
$$y = a(b)^x, b > 1$$



asymptote at  $y=0$

decay

$$y = a(b)^x, 0 < b < 1$$



asymptote at  $y=0$

\* If there's no  $a$ ,  $y = b^x$  the  $y$ -int is  $(0, 1)$