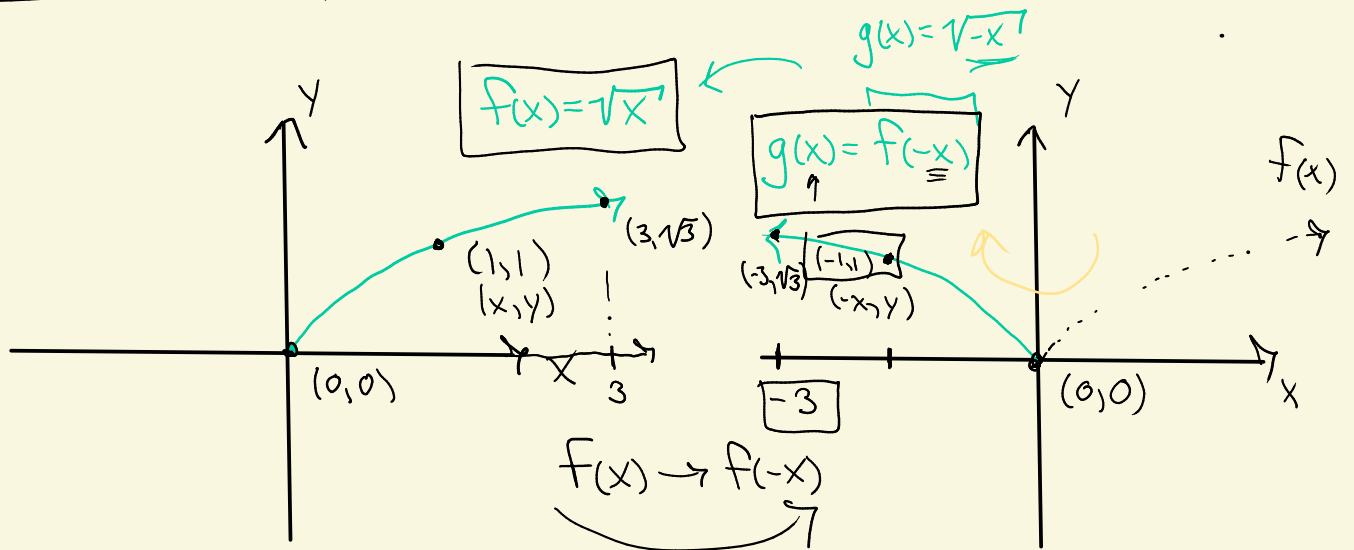


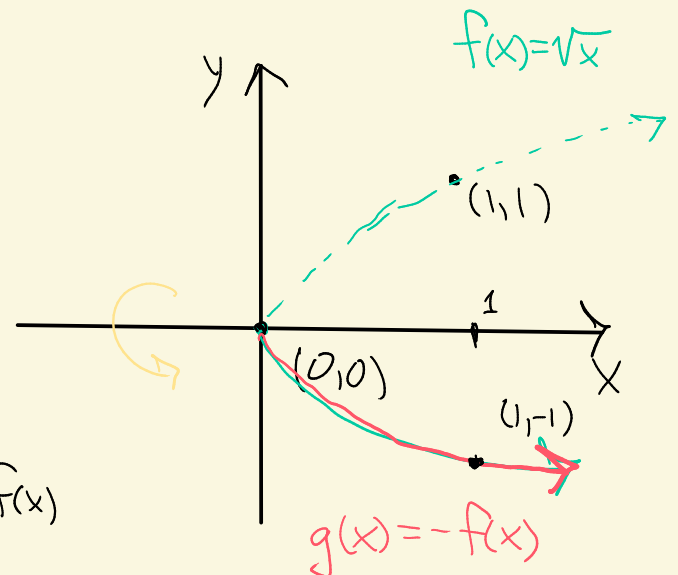
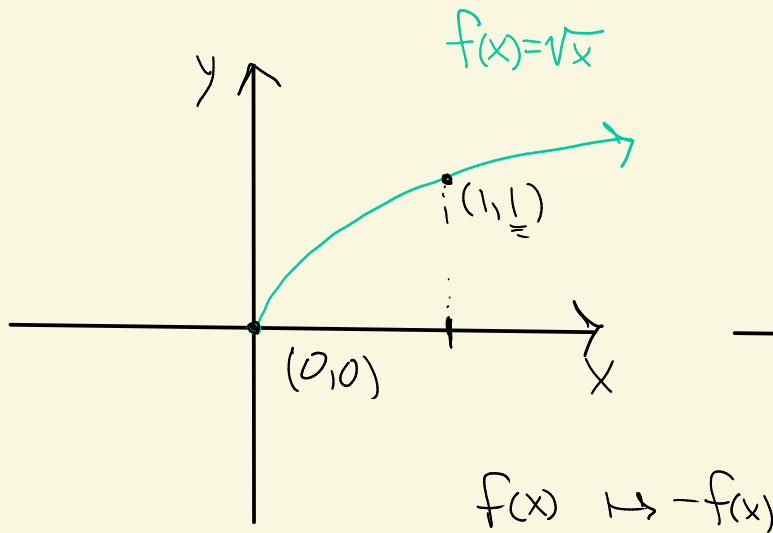
# Thursday Sep. 17<sup>th</sup> : Quiz 4 Review

## 1.7 : "Flips", even and odd functions



$$g(x) = f(-x) = \sqrt{-x}$$

$$g(\underline{-1}) = f(-(-1)) = f(1) = \sqrt{1} = 1$$



Is a function even or odd?

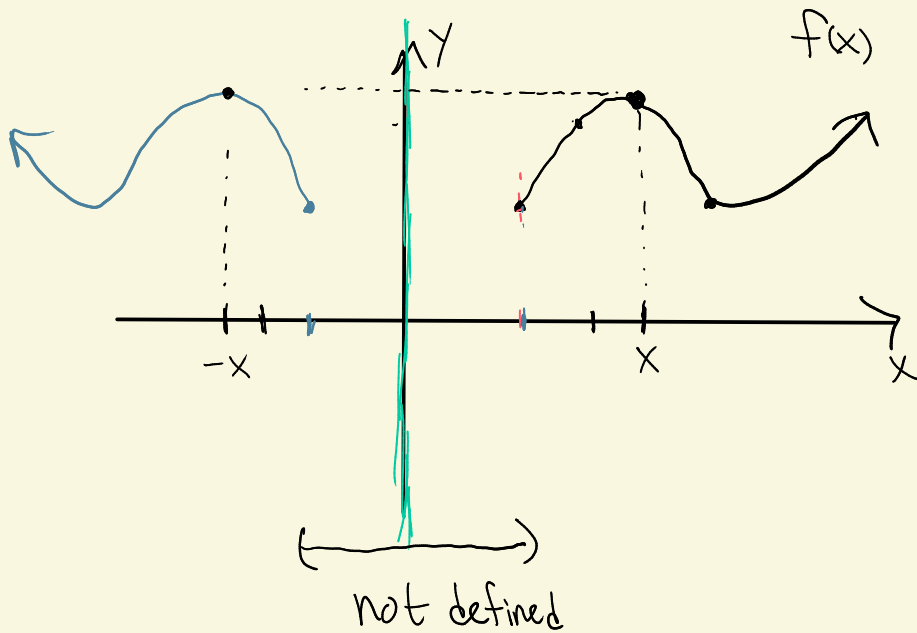
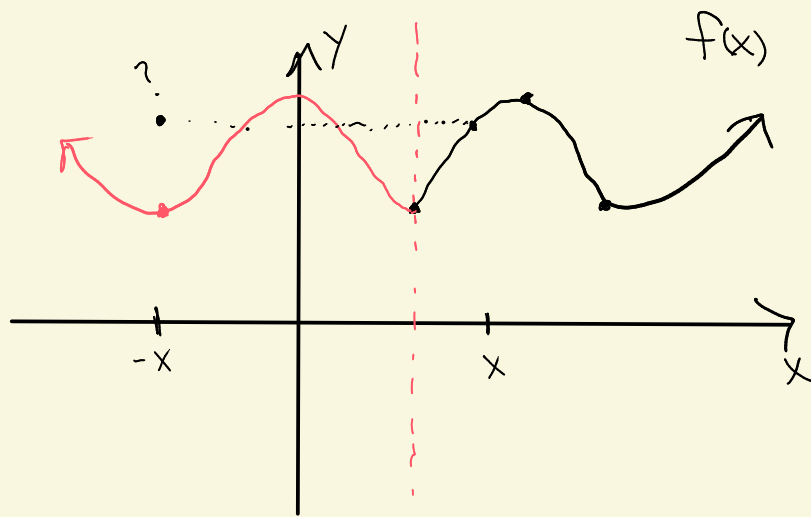
• Check  $f(-x)$

- |   |           |         |
|---|-----------|---------|
| } | ① $f(x)$  | even    |
|   | ② $-f(x)$ | odd     |
|   | ③ ?       | neither |

•  $f$  is even iff  $f(-x) = f(x)$ . ← definition

•  $f$  is odd iff  $f(-x) = -f(x)$ .

(See Preclass Solns. 1.7)



### Transformations

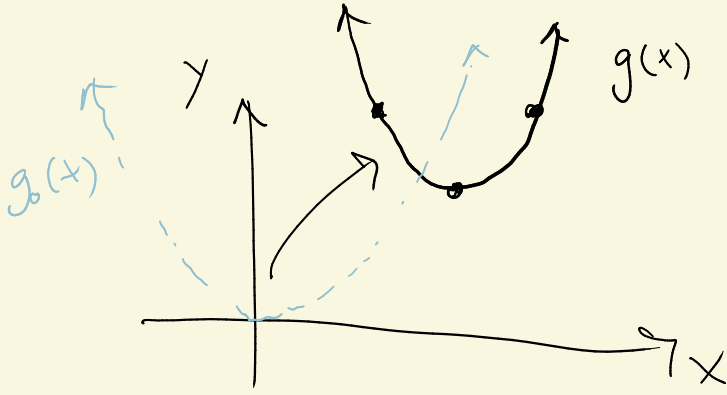
① Given an  $f(x)$ , asked to  
↳ Graph new equation

② Given a transformed  $g(x)$ , and describe:

Apply transforms

- Reflect
- Stretch
- Shift (horiz. or vert)

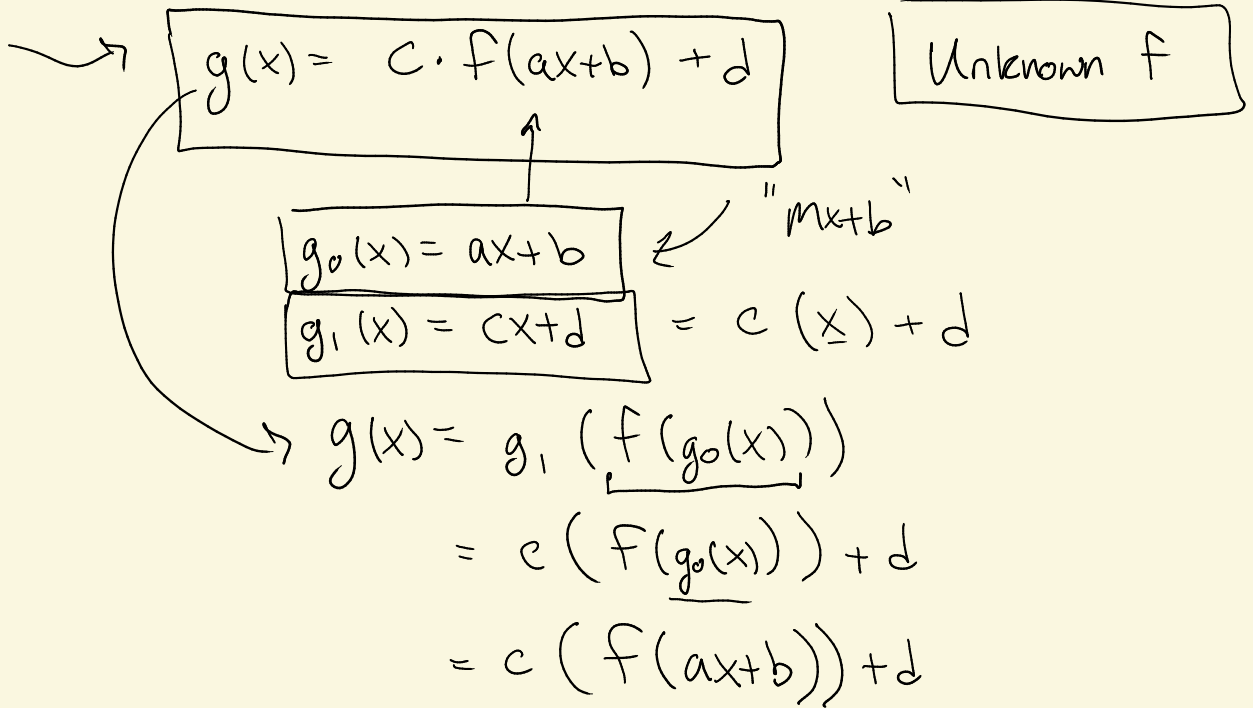
- Stretch vert  $\times 10$
- Reflect about y-axis



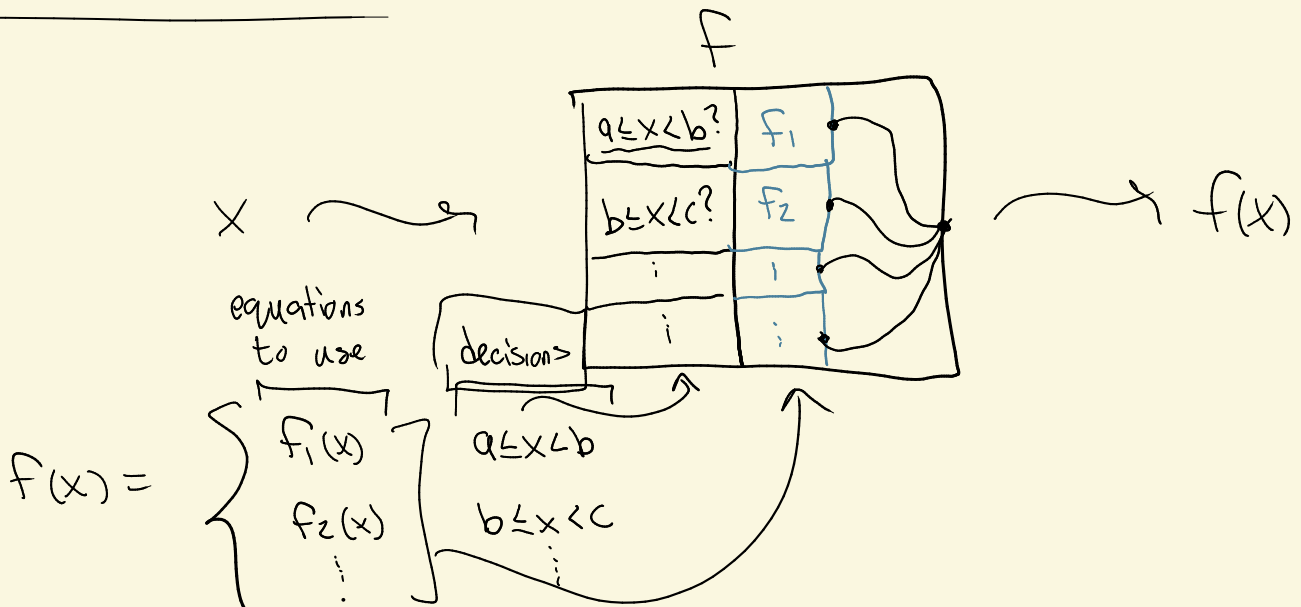
Describe the transforms

- (a) Find a parent  $f_n$   
(Eg.  $g_0(x) = x^2$ )
- (b) Apply transforms

• Most general: Parent function  $f(x)$

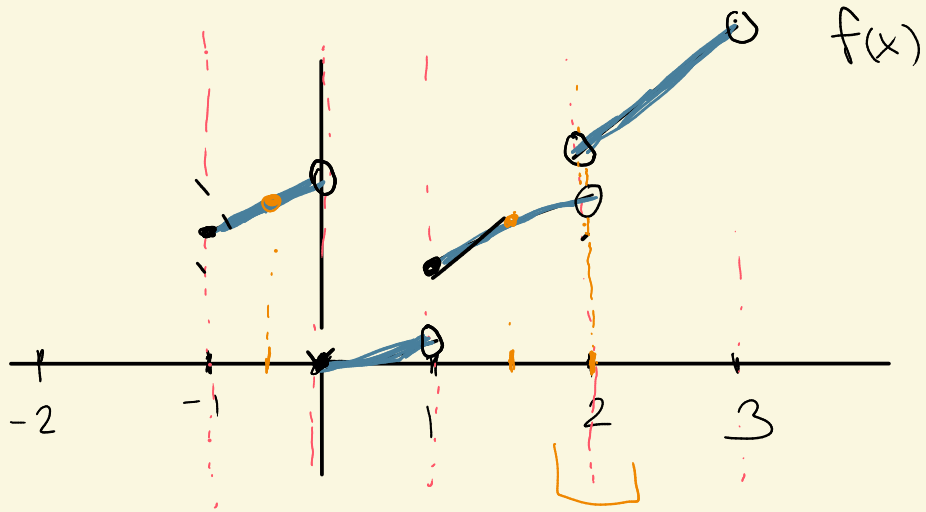


## Piecewise Functions



cutoff  $\rightarrow$  conditions

$$f(x) = \begin{cases} x+3 & -1 \leq x < 0 \\ x^2 & 0 \leq x < 1 \\ \sqrt{x} & 1 \leq x < 2 \\ |x| & 2 < x < 3 \end{cases}$$



2 not in the domain

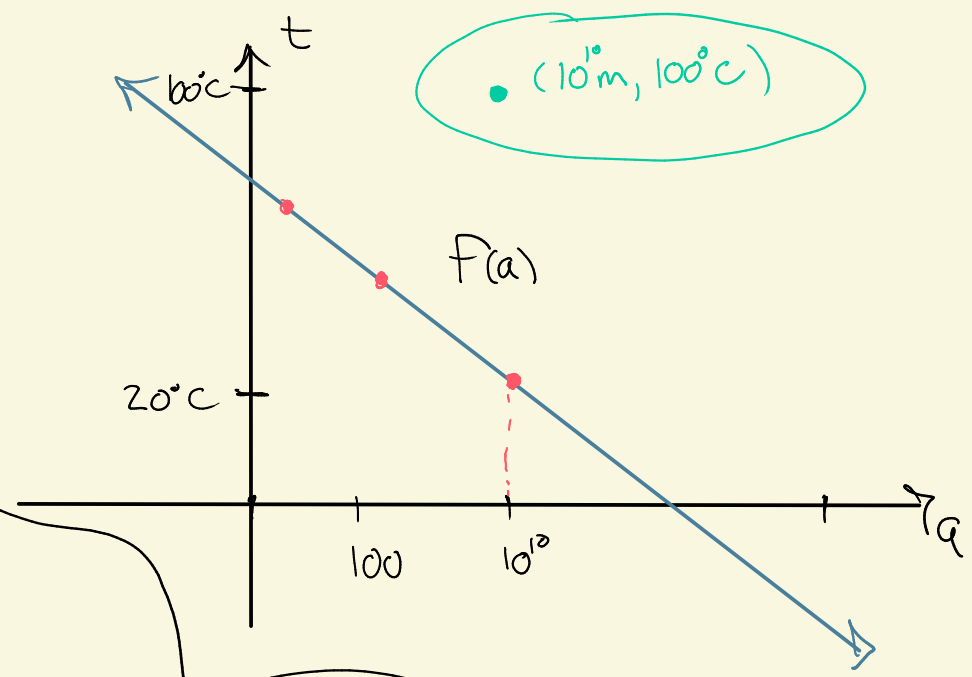
Project

temp  $\swarrow$  Altitude  $\swarrow$   
 ①  $t = f(a)$

$(t = ? \cdot a + ?)$

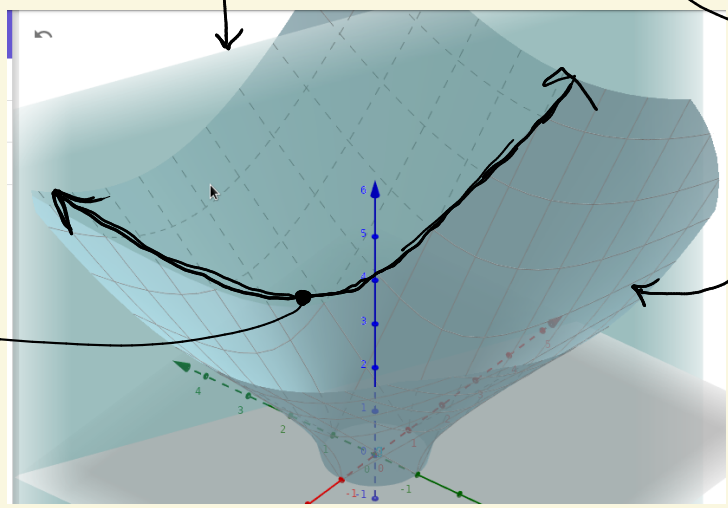
$? \cdot t + ? \cdot a = ?$

Constraint

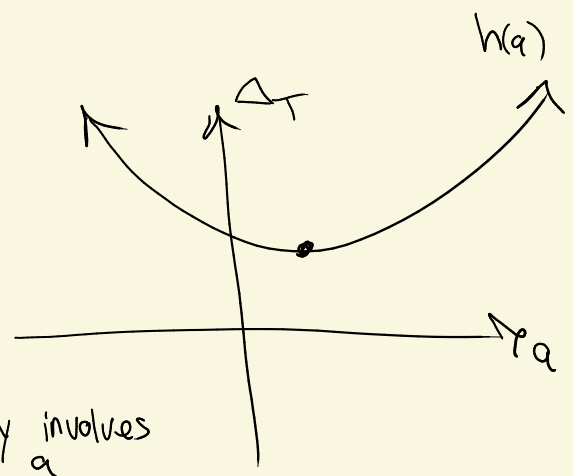


②  $\Delta_T = g(a, t)$

min



$\Delta_T = h(a) = \begin{bmatrix} ? \cdot a^2 + ? \cdot a + ? \\ \text{---} \quad \text{---} \quad \text{---} \end{bmatrix}$   
 ( $t = f(a)$ )



$\Delta_T(a, t) = L \cdot a (M - t) + N$

$\boxed{= L \cdot a (M - f(a)) + N}$  only involves  $a$