BOARD NOTES

3 SEPTEMBER 2019

2A.2 (A) graph the functions $f(x) = x^2$, $f(x) = \sqrt{x} = \sqrt[2]{x}$, $f(x) = {}^1/_x$, $f(x) = \sqrt[3]{x}$, $f(x) = x^3$, $f(x) = |x|$, $f(x) = b^x$, $f(x) = \log_b x$ where b is 2, 10, and e, and, when applicable, analyze the key attributes such as domain, range, intercepts, symmetries, asymptotic behavior, and maximum and minimum given an interval;

2A.2 (D) use the composition of two functions, including the necessary restrictions on the domain, to determine if the functions are inverses of each other;

2A.7 (I) write the domain and range of a function in interval notation, inequalities, and set notation.

We will be able to analyze the key attributes such as reflections across the x-axis, y-axis, origin, and if the function is even, odd or neither.

WHAT WE NEED:

- TI – 84
- Definition of:
  - Even
  - Odd

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVING THE

- Domain
- Range
- Intercepts (if any)
- Intervals of: Increasing / Decreasing / Constant
- Reflections
- Even / Odd / Neither

x	y
-9	-6
-5	8
-2	8
0	4
2	0
4	-4
8	0
10	2

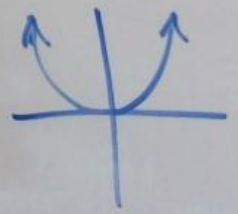
* Y-AXIS

$(x,y) \rightarrow (-x,y)$ $y = f(-x)$

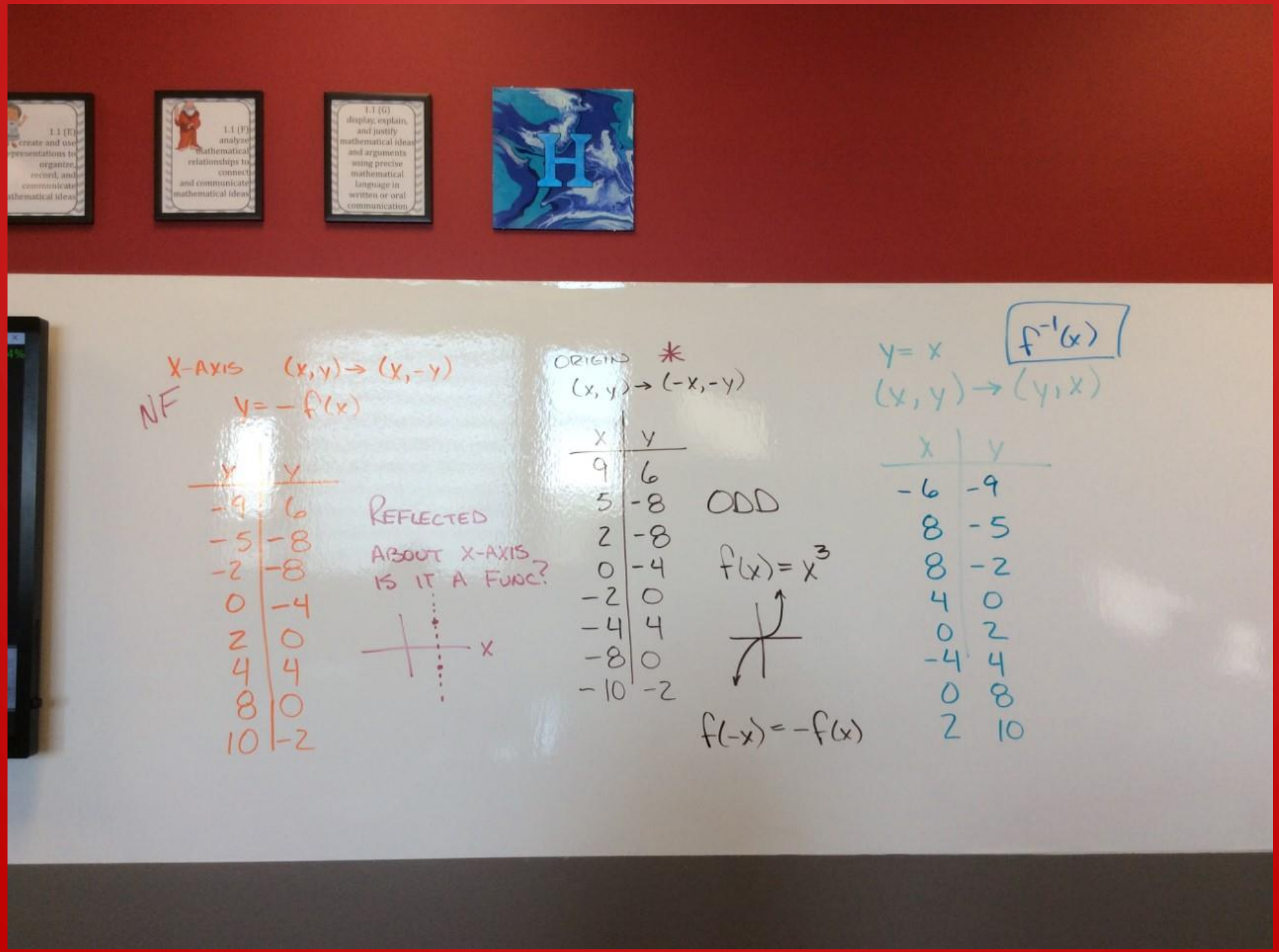
x	y
9	-6
5	8
2	8
0	4
-2	0
-4	-4
-8	0
-10	2

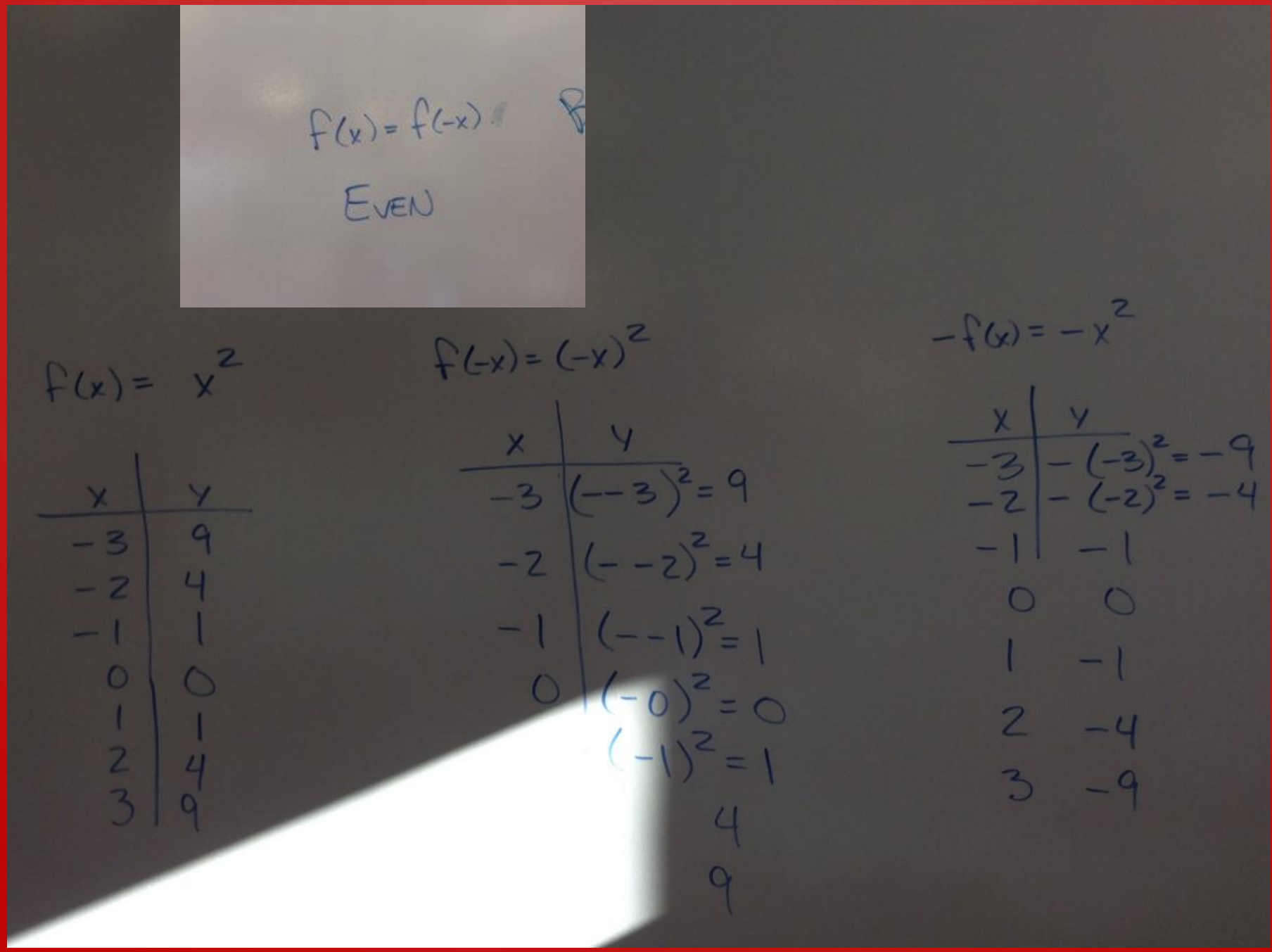
EVEN

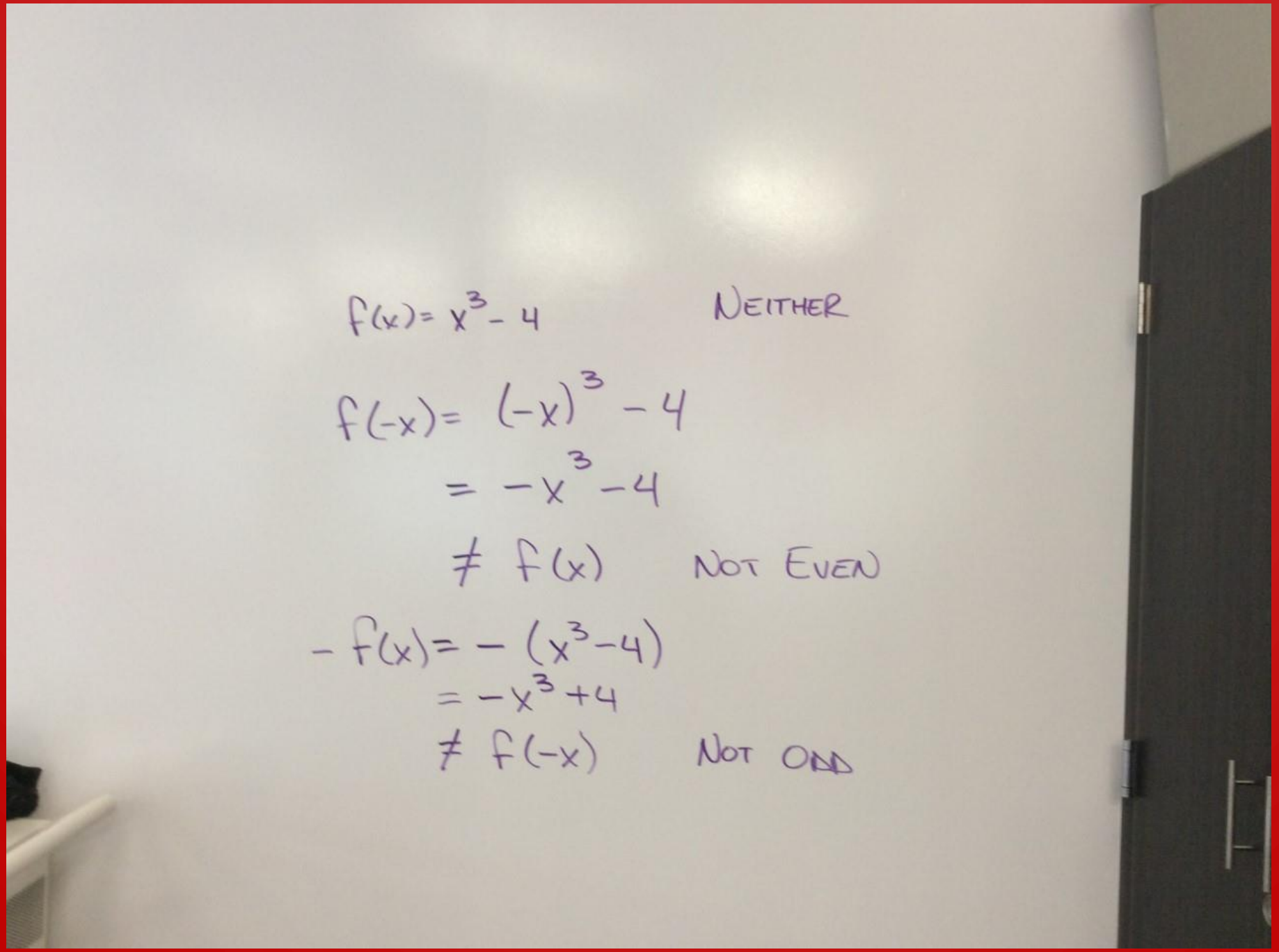
$f(x) = x^2$



$f(-x) = f(x)$


X-AXIS (x,y) → (x,-y)
NF y = -f(x)
x | y
-9 | 6
-5 | -8
-2 | -8
0 | -4
2 | 0
4 | 4
8 | 0
10 | -2
REFLECTED ABOUT X-AXIS
IS IT A FUNC?
x
ORIGIN *
(x, y) → (-x, -y)
x | y
9 | 6
5 | -8
2 | -8
0 | -4
-2 | 0
-4 | 4
-8 | 0
-10 | -2
ODD
f(x) = x^3
f(-x) = -f(x)
y = x
(x, y) → (y, x)
f^-1(x)
x | y
-6 | -9
8 | -5
8 | -2
4 | 0
0 | 2
-4 | 4
0 | 8
2 | 10


f(x) = f(-x)
EVEN
f(x) = x²
x | y
-3 | 9
-2 | 4
-1 | 1
0 | 0
1 | 1
2 | 4
3 | 9
f(-x) = (-x)²
x | y
-3 | (--3)² = 9
-2 | (--2)² = 4
-1 | (--1)² = 1
0 | (-0)² = 0
(-1)² = 1
4
9
-f(x) = -x²
x | y
-3 | -(-3)² = -9
-2 | -(-2)² = -4
-1 | -1
0 | 0
1 | -1
2 | -4
3 | -9


$f(x) = x^3 - 4$ NEITHER
$f(-x) = (-x)^3 - 4$
$= -x^3 - 4$
$\neq f(x)$ NOT EVEN
$-f(x) = -(x^3 - 4)$
$= -x^3 + 4$
$\neq f(-x)$ NOT ODD