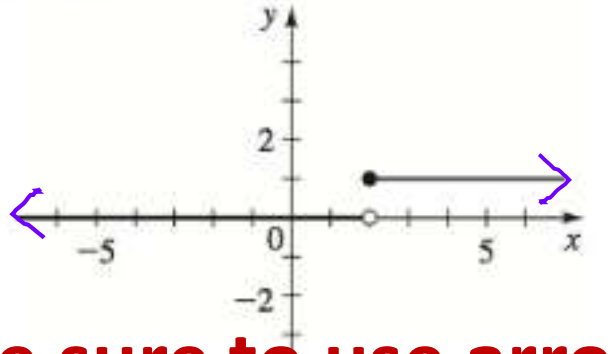
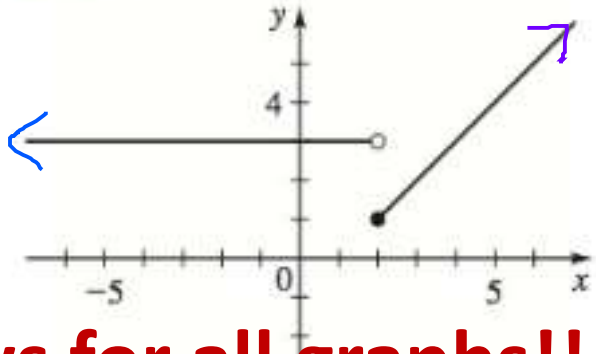
Check even answers for 2.2

33.

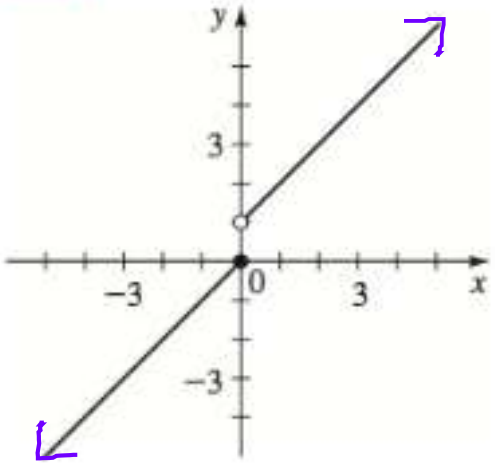


35.

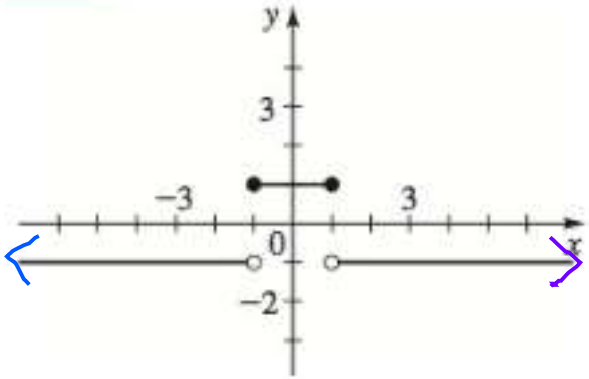


Note: be sure to use arrows for all graphs!!

37.

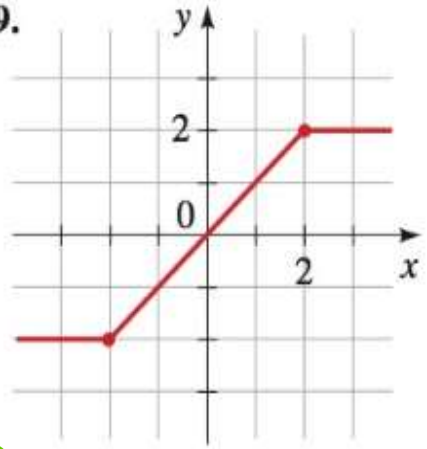


39.



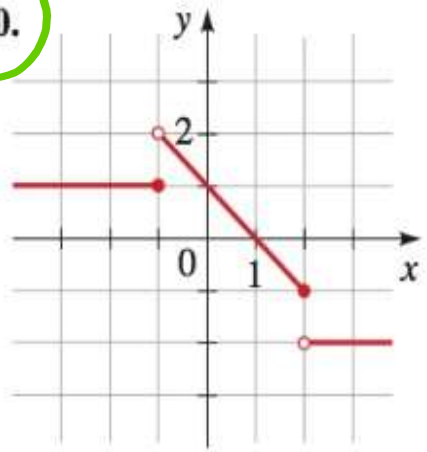
49–50 ■ Finding Piecewise Defined Functions A graph of a piecewise defined function is given. Find a formula for the function in the indicated form.

49.



$$f(x) = \begin{cases} \quad & \text{if } x < -2 \\ \quad & \text{if } -2 \le x \le 2 \\ \quad & \text{if } x > 2 \end{cases}$$

50.



$$f(x) = \begin{cases} \quad & \text{if } x \le -1 \\ \quad & \text{if } -1 < x \le 2 \\ \quad & \text{if } x > 2 \end{cases}$$

y = 1

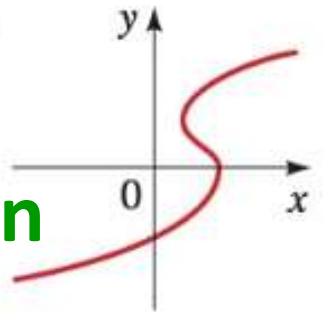
y = −x + 1

y = −2

Check even answers for 2.2

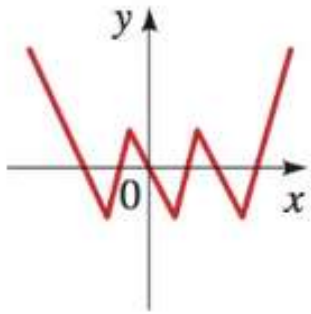
51–52 ■ Vertical Line Test Use the Vertical Line Test to determine whether the curve is a graph of a function of x.

52. (a)



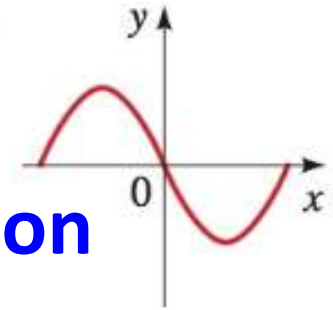
Not a function

(b)



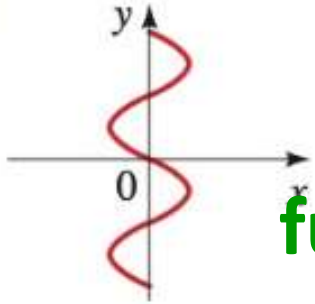
Function

(c)



Function

(d)

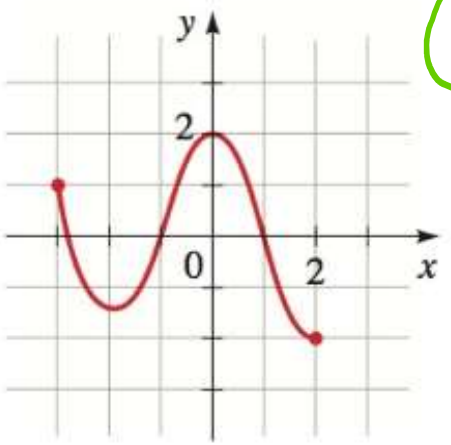


Not a function

Check even answers for 2.2

53–56 ■ Vertical Line Test: Domain and Range Use the Vertical Line Test to determine whether the curve is a graph of a function of x. If it is, state the domain and range of the function.

53.

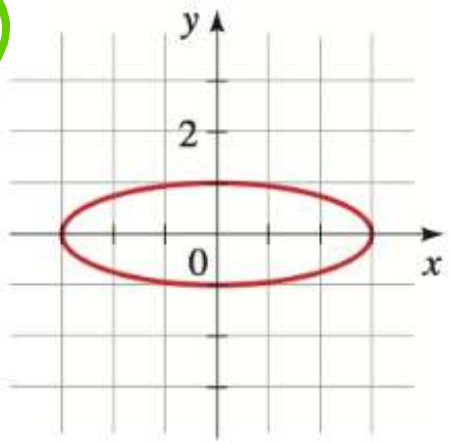


Function :

D = [-3, 2]

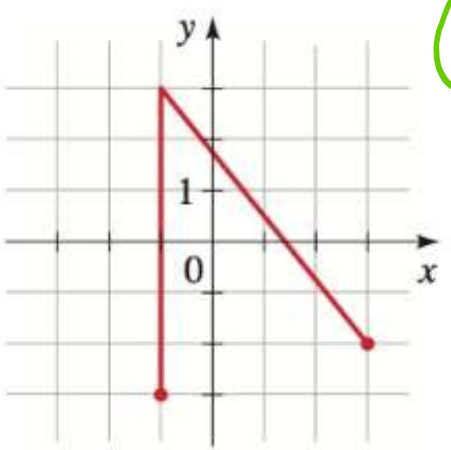
R= [-2, 2]

54.



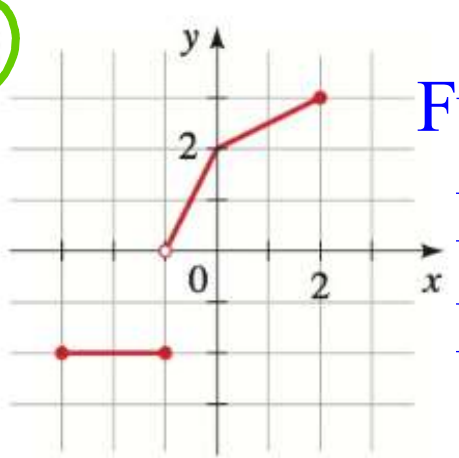
Not a function

55.



Not a function

56.



Function :

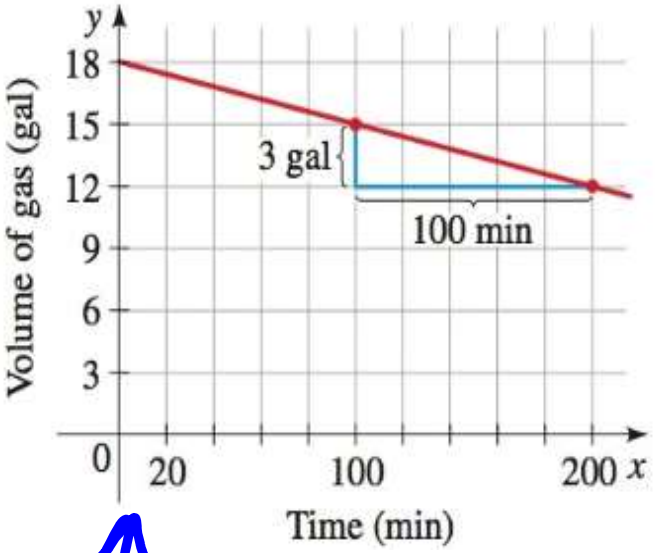
D = [-3, 2]

R= [-2] ∪ (0, 3]

Check even answers for 2.2

2.5 Notes: Linear Functions

Reminders: $\text{slope} = \dfrac{\text{rise}}{\text{run}}$ or $\dfrac{\Delta y}{\Delta x}$



slope also represents the "rate of change"

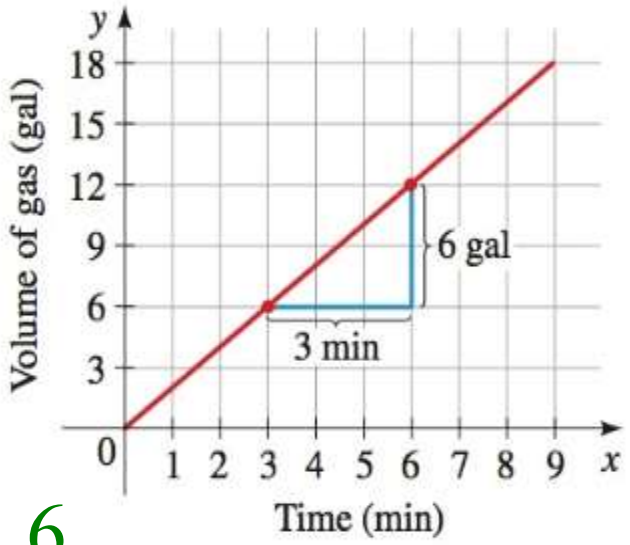
$y = mx + b$ (or $y = ax + b$)

slope (rate of change)

y-intercept (initial value)

If $m = \frac{3}{100}$ and $b = 18$, then $y = \frac{3}{100}x + 18$

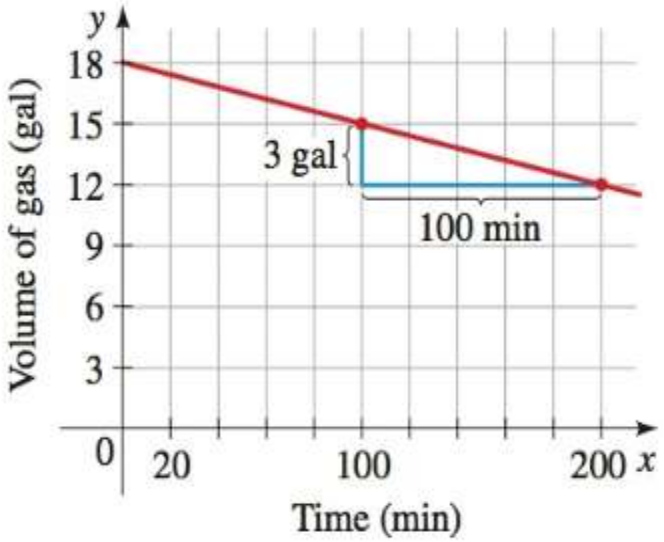
$$\text{slope} = \frac{\text{rise}}{\text{run}}$$ and slope also represents the rate of change



(a) Tank filled at 2 gal/min
Slope of line is 2

$$\text{slope} = \frac{6}{3}$$

or 2 gal per min



(b) Tank drained at 0.03 gal/min
Slope of line is 0.03

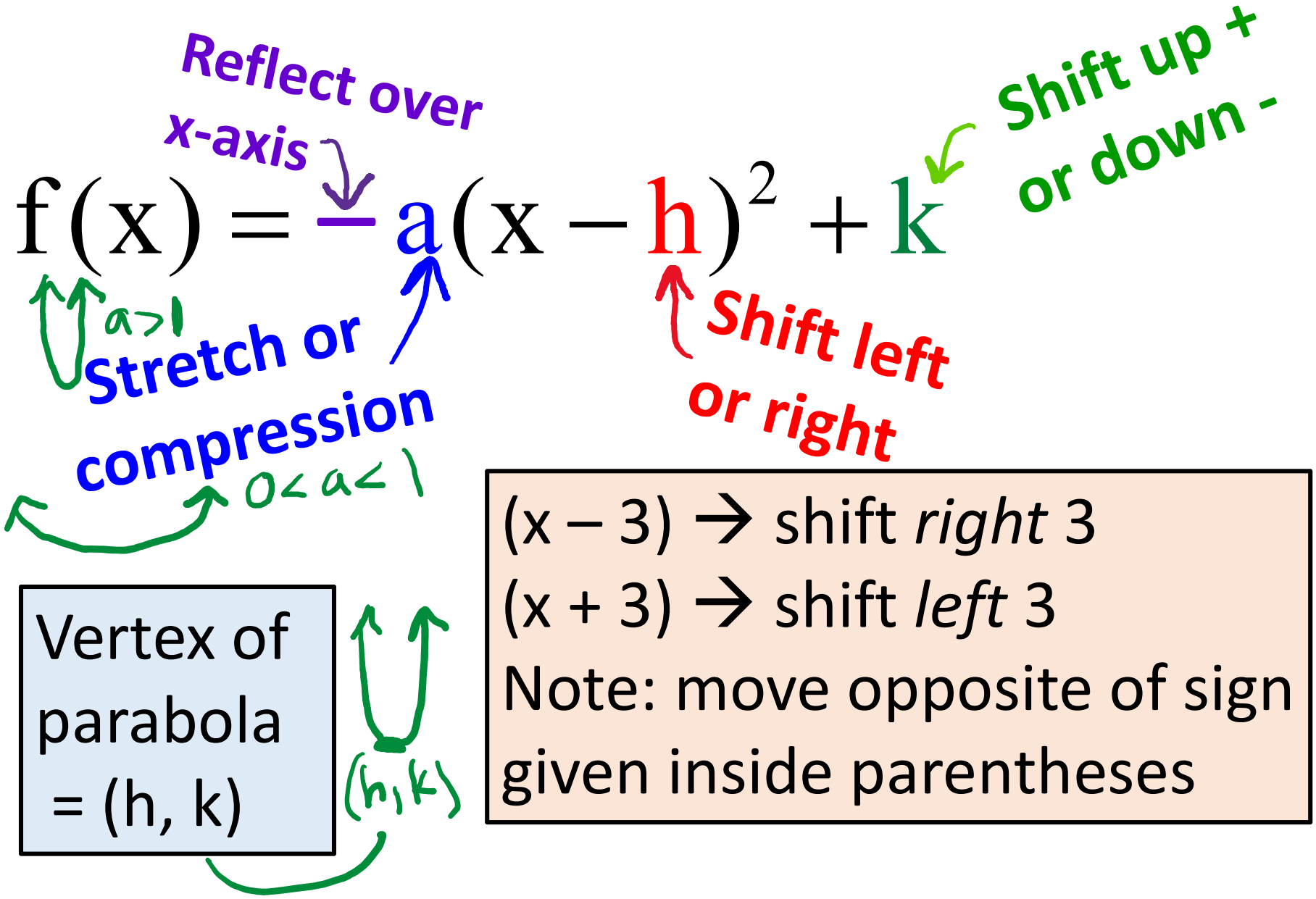
$$\text{slope} = \frac{3}{100}$$

or .03 gal per min

Figure 3 from section 2.5 in book

Examples for 2.5

2.6 Notes: Transformations of Functions



2.6 Notes: Transformations of Functions

odd function: symmetrical with respect to the *origin*

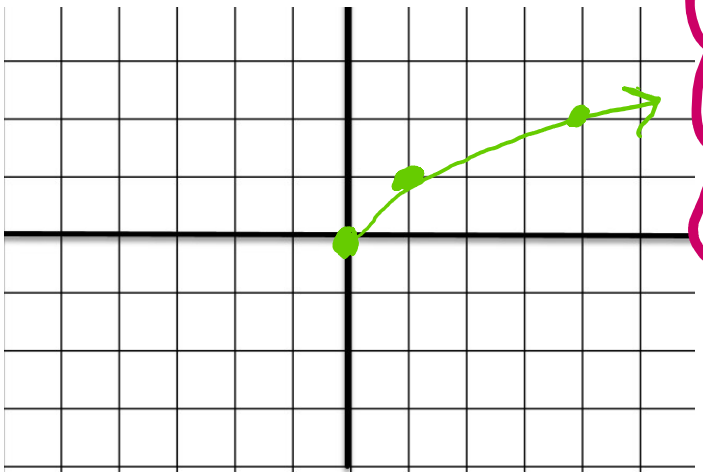
(rotate graph 180° about origin)

even function: symmetrical with respect to the *y-axis*

(reflect across y-axis)

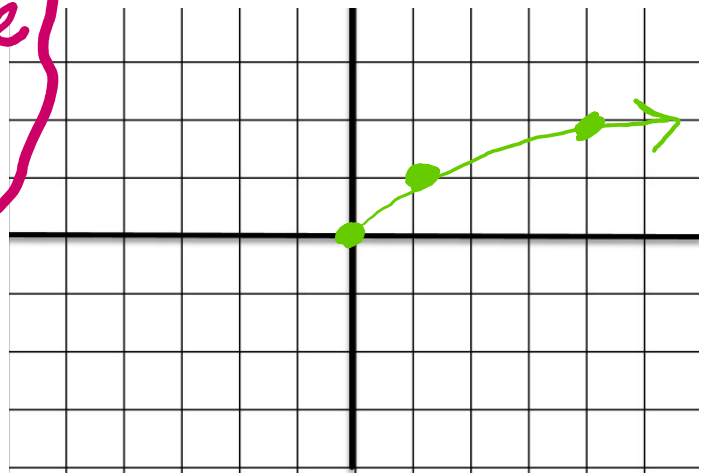
Example#1: complete the graph to create an

a. even function



add example to notes

b. odd function



See next slide for solution

2.6 Notes: Transformations of Functions

odd function: symmetrical with respect to the *origin*

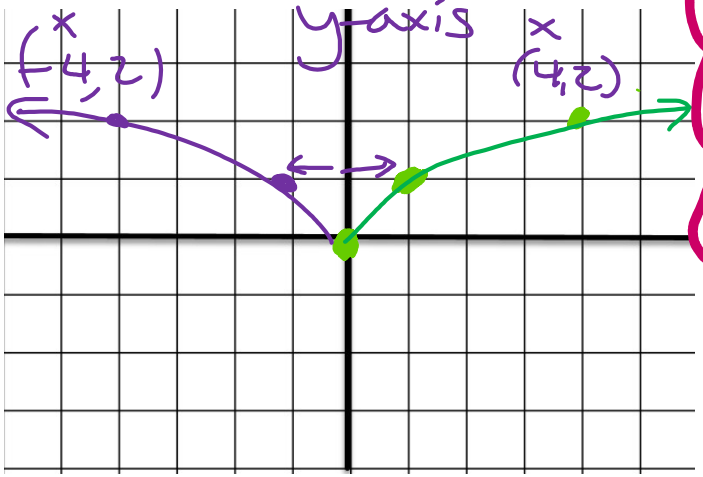
(rotate graph 180° about origin)

even function: symmetrical with respect to the *y-axis*

(reflect across y-axis)

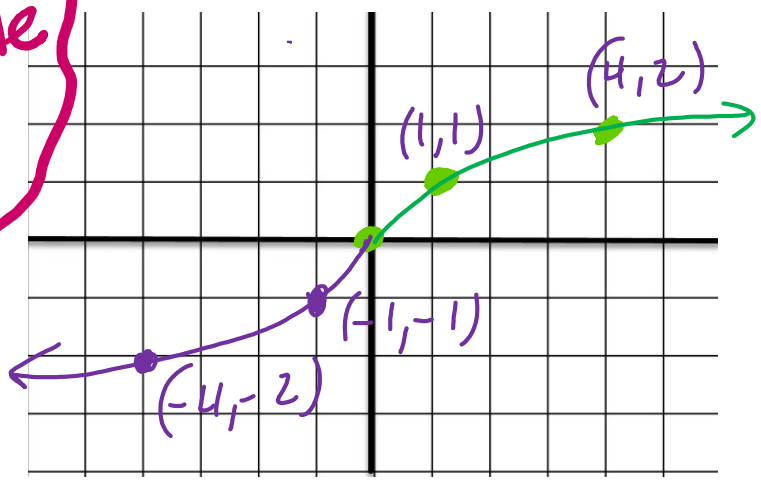
Example#1: complete the graph to create an

a. even function



add example to notes

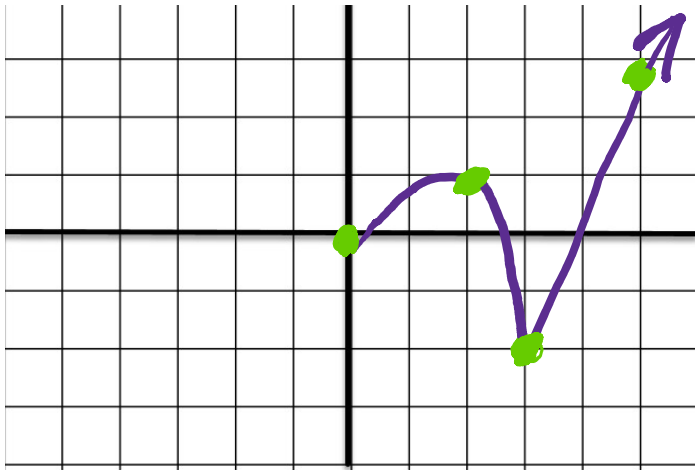
b. odd function



2.6 Notes: Transformations of Functions

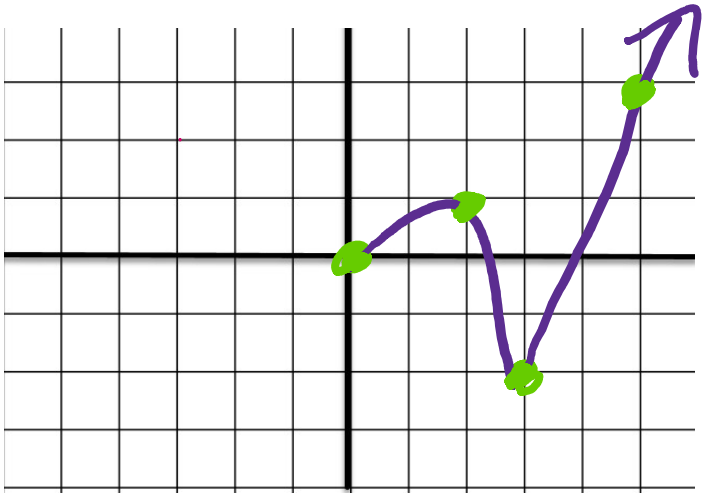
Example#2: complete the graph to create an

a. even function



y-axis symmetry

b. odd function



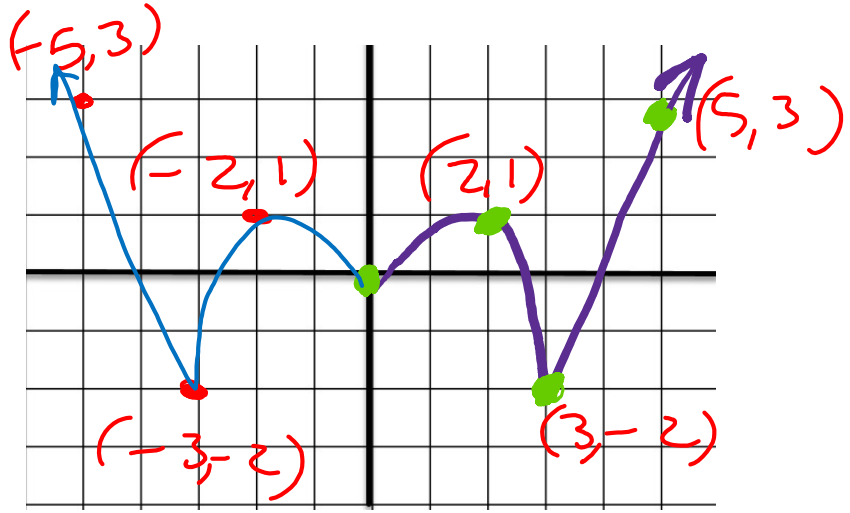
origin symmetry (rotate 180°)

2.6 Notes: Transformations of Functions

on today's graph paper!!

Example#2: complete the graph to create an

a. even function



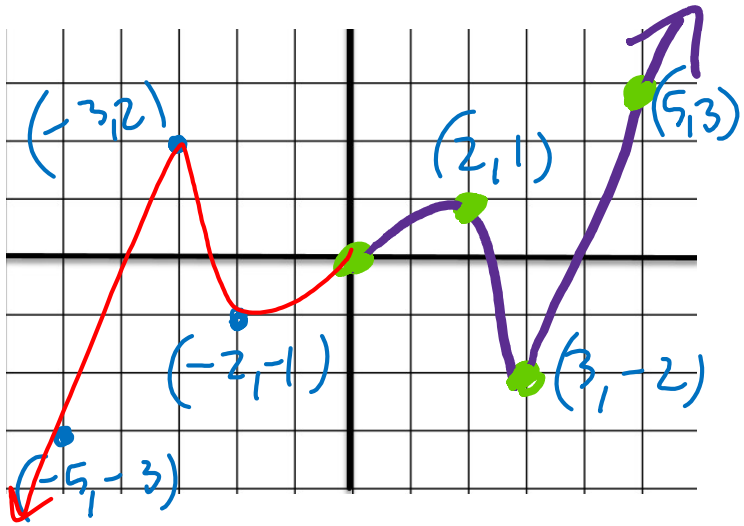
y-axis Symmetry

change x to opposite value

$x \rightarrow -x$

y is the same

b. odd function



point of symmetry

$x \rightarrow -x$ (rotate)

$y \rightarrow -y$

change x and y to their opposite values