

Pg 43

#41 $f(x) = |x|$

$g(x) = -2|x+2| + 4$

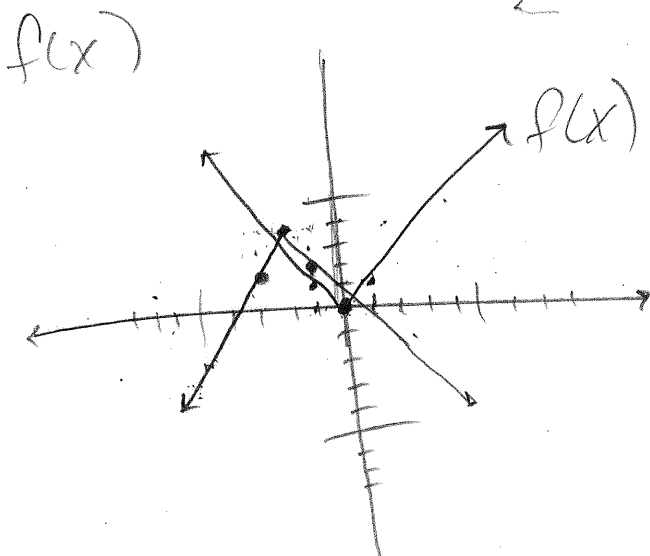
UP/down shift

← flipped upside

up 4 units

left 2 units

stretched by 2



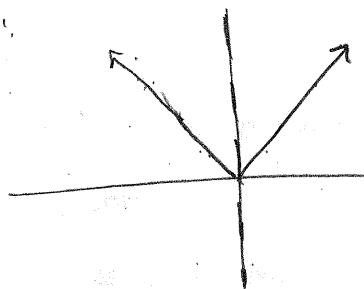
Symmetric about the y-axis

if I fold my function on the y-axis then the two parts line up perfectly

Symmetric about y-axis = even function

$f(-x) = f(x)$ ✓

Ex:



$f(x) = |x|$
even
y-axis
symmetry

$f(-x) = |x|$

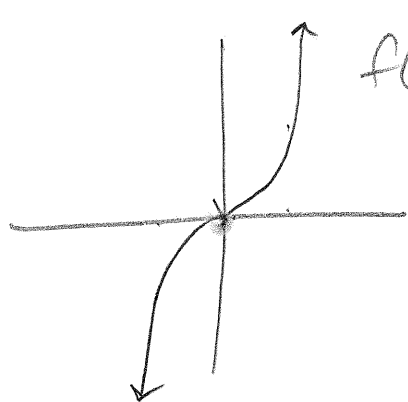
$f(x) = |x|$

$f(-x) = |x|$

$|x| = |x|$

$f(-x) = f(x)$ ✓

Origin Symmetry: Rotation Symmetry about the origin



$$f(x) = x^3$$

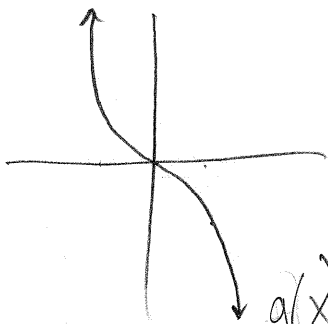
$$f(-x) = -f(x)$$

$$(-x)^3 = -x^3$$

$$(-x)(-x)(-x)$$

$$-x^3 = -x^3 \checkmark$$

Origin symmetry, odd function



$$g(x) = -x^3$$

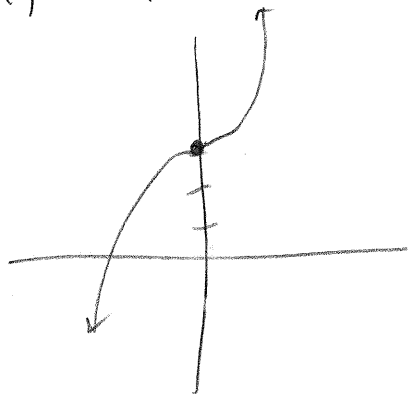
$$f(x) = x^3 + x^2$$

$$f(x) = x^3 + x^2 + 1$$

No symmetry

Neither even or odd

$$f(x) = x^3 + 3x^0$$



~~origin symmetry~~
Neither

$$f(-x) \stackrel{?}{=} -f(x)$$

$$(-x)^3 + 3 = -(x^3 + 3)$$

$$-x^3 + 3 \neq -x^3 - 3$$

#77 $f(x) = \frac{1}{x-3}$

$y = \frac{1}{x-3}$

$(y-3)x = \frac{1}{(y-3)}(y-3)$

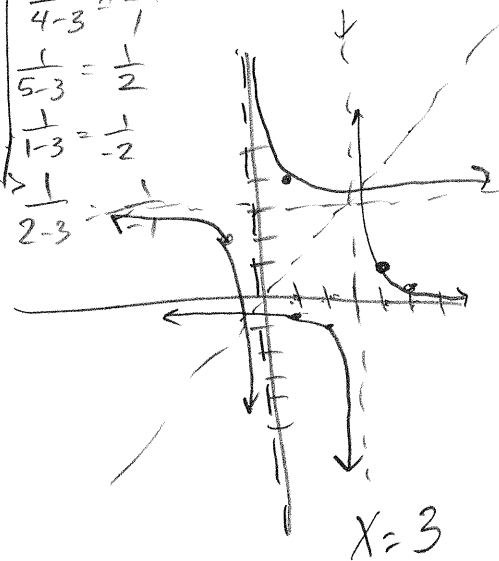
$\frac{(y-3)x}{x} = \frac{1}{x}$

$y-3 = \frac{1}{x} + 3$

$y = \frac{1}{x} + 3$

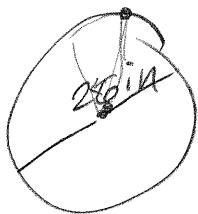
$f^{-1}(x) = \frac{1}{x} + 3$

X	f(x)
4	$\frac{1}{4-3} = 1$
5	$\frac{1}{5-3} = \frac{1}{2}$
1	$\frac{1}{1-3} = -\frac{1}{2}$
2	$\frac{1}{2-3} = -1$



Pg 109

#68



Radius = 13 in

$v = \frac{16 \text{ mi}}{\text{hr}}$

$16 = \frac{13}{12(5280)} \cdot \omega$

$\omega = r\omega$
Rad/time

$\omega = 77981.54 \text{ Rad/hr}$

linear velocity = $\frac{\text{distance}}{\text{time}}$

16 mph

angular velocity ? Rad/hr

$13 \text{ in} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}}$