

# Symmetry Test:

$$y = f(x) = x^2$$

Replacing "x" by "-x" then we find

$$y = f(-x) = (-x)^2$$

$$\Rightarrow y = x^2$$



$$y^2 = x \Rightarrow y = f(x) = \pm \sqrt{x}$$

Replacing "y" by "-y" we find

$$-y = \pm \sqrt{x}$$

$$\Rightarrow y = \pm \sqrt{x}$$

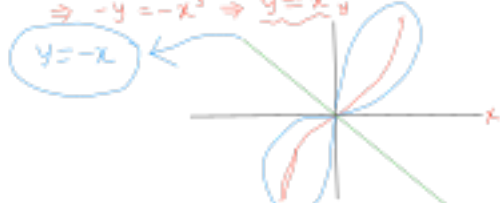


$$y = f(x) = x^3$$

Replacing "x" and "y" by "-x" and "-y", respectively, we find

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

$$\Rightarrow -y = -x^3 \Rightarrow y = x^3$$



1. Even function:  $f(-x) = f(x)$
2. Odd function:  $f(-x) = -f(x)$
3. Neither Even nor Odd:  $N$

Family of functions:

$$y = f(x) = x^n$$

$$n = 1, 2, 3, 4, \dots$$

$$y = x$$

$$y = x^2$$

$$y = x^3$$

$$y = f(x) = \sin cx$$

$$c = 1, 2, 3, \dots$$

$$y = f(x) = ax$$

$$a = 1, 2, 3, 4, \dots$$

