

Definition: Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function. We say f is:

- Even if $f(-x) = f(x)$ $\forall x \in \mathbb{R}$. $\leftarrow$

- Odd if $f(-x) = -f(x)$ $\forall x \in \mathbb{R}$. $\rightarrow$

EXAMPLE

Preview from Notesale.co.uk
Page 7 of 9

$$f(x) = x^2$$
$$f(-3) = 9$$

$$f(3) = 9$$

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

$$f(x) = x^2 \text{ is EVEN}$$

$$g(x) = -x^2$$

$$g(-3) = -(-3)^2 = -9$$

$$g(3) = -3^2 = -9$$

$$g(-x) = -(-x)^2 = -x^2 = g(x)$$

$$g(x) = -x^2 \text{ is ODD}$$