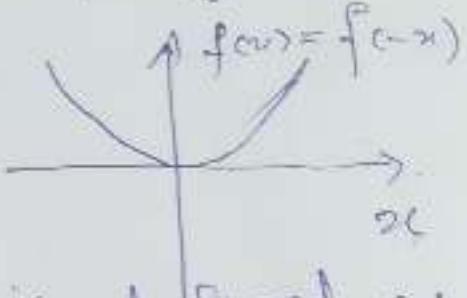
A function has even parity if

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



A parity operator $\hat{P}$ is defined as

$$\hat{P} f(x) = f(-x)$$

Let us look at the eigenvalue of operator $\hat{P}$. Let α be the eigenvalue of $\hat{P}$

$$\hat{P} f(x) = f(-x) = \alpha f(x)$$

$$\hat{P}\hat{P} f(x) = \hat{P} f(-x) = f(x) = \alpha^2 f(x)$$

$\Rightarrow$

$$\alpha^2 = 1 \quad \text{or} \quad \alpha = \pm 1$$

for $\alpha = +1$, we optained

$$f(-x) = f(x) \quad \text{even parity.}$$

for $\alpha = -1$

$$f(-x) = -f(x) \quad \text{odd parity.}$$

Example: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.11, 2.12, 2.13, 2.15, 2.19, 2.20.

Solved Pol: 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.16

Exercise: 2.1 – 2.6, 2.16, 2.18, 2.25, 2.29 – 2.34