

$$f(x) = \frac{1}{b-a}$$

$$E(x) = \mu x = \int_{-\infty}^{\infty} x \cdot f(x) dx$$

$$E(x) = \int_{-\infty}^{\infty} x \cdot \frac{1}{b-a} dx$$

$$= \frac{1}{b-a} \int_{-\infty}^{\infty} x dx$$

$$= \frac{1}{b-a} \left[ \frac{x^2}{2} \right]_{-\infty}^{\infty}$$

$$= \frac{1}{b-a} [0]$$

$$= 0$$

The expected value of  $x$ ,  $E(x) = 0$