

Dem :

$$E(x) = \int_{-d}^{+d} x f(x) dx = \int_{-d}^a x \times 0 dx + \int_a^b x \cdot \frac{1}{b-a} dx + \int_b^{+d} x \times 0 dx$$

$$= 0 + \frac{1}{b-a} \left[\frac{x^2}{2} \right]_a^b + 0$$

$$= \frac{b^2 - a^2}{2(b-a)} = \frac{(b/a)(b+a)}{2(b/a)}$$

$$= \frac{a+b}{2}$$