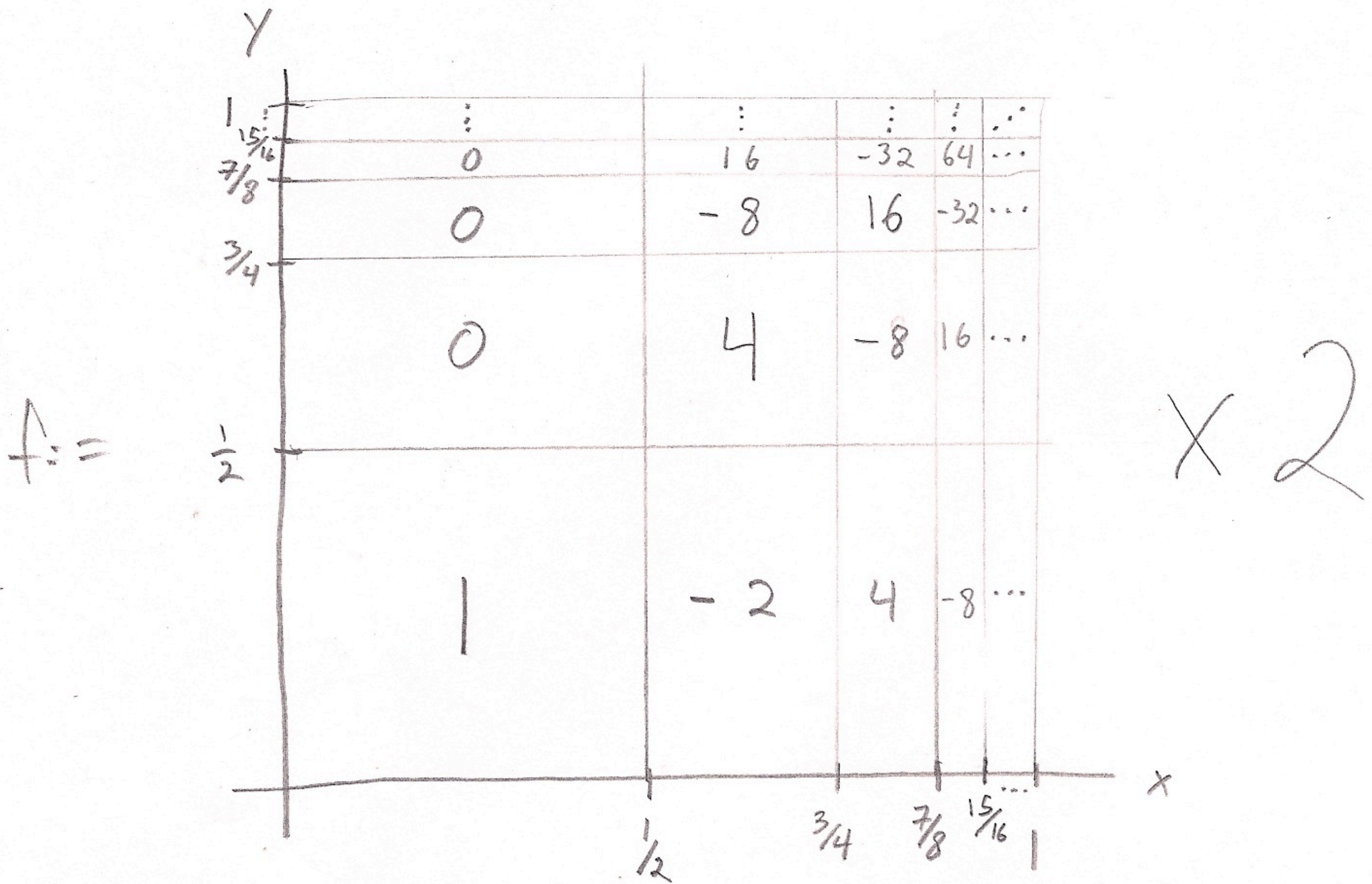


0013-2: The function that satisfies the desired properties is best described graphically below.



Note  $\forall y \in [0, 1] \int_I f \, d\lambda_x(x) = 0$

$\forall x \in [0, \frac{1}{2}] \int_I f \, d\lambda_x(y) = 1$

$\forall x \in (\frac{1}{2}, 1] \int_I f \, d\lambda_x(y) = 0$