27. For each of the following, find the PDF of Y and show that it integrates to one.

(a) $f_X(x) = \frac{1}{2}e^{-|x|}, \quad -\infty < x < \infty; Y = |X|^3.$

(b) $f_X(x) = \frac{3}{8}(x+1)^2, \quad -1 < x < 1; Y = 1 - X^2.$