91. To generate energy, a certain house has solar panels and a wind turbine. Let X be the percentage of time that the solar panels generate electricity and Y the percentage of time the wind turbine generates electricity. Assume that the joint probability density function of X and Y is

$$f_{X,Y}(x,y) = \frac{8}{3}\left(\frac{1}{2} - x + y\right), \quad 0 \le x \le 0.5, \quad 0 \le y \le 1.$$

(a) Prove or disprove that X and Y are independent.

(b) Find the covariance of X and Y.