If the joint probability density function of random variables X and Y is

$$f_{X,Y}(u, v) = \left(\pi\sqrt{3} \cdot e^{(2/3)(u^2 - uv + v^2)}\right)^{-1}$$

then what is the variance of $X + 2Y$?

(a) 7

(b) 5

(c) 2

(d) 4

(e) 6

(f) 3

(g) 1

(h) 8

(i) 9

(j) 12

(k) 10

(l) None of these