Suppose Y is a random variable with probability density function

$$f_Y(u) = \frac{C}{e^{u^2+u}}$$

for all u, where C is a constant. What is the mean times the variance of Y?

(a) $-1/4$

(b) $-1/2$

(c) $1/4$

(d) $1/2$

(e) 1

(f) 2

(g) -1

(h) -2

(i) $\sqrt{2}$

(j) $\sqrt{2}/2$

(k) 0

(l) None of these.