

Let X and Y be independent random variables whose probability density functions satisfy

$$f_X(u) = f_Y(u) = \begin{cases} e^{-u} & \text{if } u \geq 0 \\ 0 & \text{else} \end{cases}$$

What is the probability that Y is less than $4X$?

- (a) $4/5$
- (b) $5/6$
- (c) $3/4$
- (d) $1/4$
- (e) $1/5$
- (f) $1/3$
- (g) $1/2$
- (h) $1/(4e)$
- (i) $3/(4e)$
- (j) 1
- (k) 0
- (l) None of these