The joint probability density function of X and Y when $u, v > 0$ is $f_{X,Y}(u,v) = Ke^{-12u-18v}$, where K is a constant, and is zero otherwise. If $Z = 4X$ and $W = 3Y$, then which of the following is the joint pdf $f_{Z,W}(u,v)$ of Z and W when $u, v > 0$?

(a) $18e^{-3u-6v}$

(b) $\frac{1}{12} \cdot e^{-3u-6v}$

(c) $216e^{-3u-6v}$

(d) $12e^{-3u-6v}$

(e) $18e^{-12u-18v}$

(f) $\frac{1}{12} \cdot e^{-12u-18v}$

(g) $18e^{-(u/4)-(v/3)}$

(h) $18e^{-(u/12)-(v/18)}$

(i) $18e^{-48u-54v}$

(j) $216e^{-12u-18v}$

(k) None of these