MATH 2131

Quiz 3

Don't forget to include your name and student number

The random variables X and Y are independent, each having an Exponential(λ) distribution, e.g.

$$f_X(x) = \lambda e^{-\lambda x}, \quad 0 < x < \infty$$

Find the joint density, $f_{UV}(u, v)$, of the random variables $U = X+Y$ and $W = X-Y$.

Don't forget to include relevant bounds on the domain of the density.