Use the joint density of $X$ and $Y$ to find the single-variable density of $X$ or of $Y$. (Sometimes called the marginal density of $X$ or $Y$.)

In general if $X$ and $Y$ have joint density $f_{X,Y}(x,y)$
then $X$ has density $f_X(x) = \int_{-\infty}^{\infty} f_{X,Y}(x,y) \, dy$ i.e. think: integrating $y$ out of the picture,

and $Y$ has density $f_Y(y) = \int_{-\infty}^{\infty} f_{X,Y}(x,y) \, dx$ i.e. integrate $x$ out of the picture.

**Example** Say $X$, $Y$ have joint density $f_{X,Y}(x,y) = \begin{cases} 6e^{-2x-3y} & x>0, y>0 \\ 0 & \text{otherwise} \end{cases}$

Then $X$ has density $f_X(x) = 0$ if $x<0$

or if $x>0$ : $f_X(x) = \int_{0}^{\infty} 6e^{-2x-3y} \, dy = 6e^{-2x} \left[ -\frac{1}{3} \right]_{y=0}^{\infty} = 2e^{-2x}$ (for $x>0$)

Also $Y$ has density : $f_Y(y) = 0$ if $y<0$

or if $y>0$ : $f_Y(y) = \int_{0}^{\infty} 6e^{-2x-3y} \, dx = 6e^{-3y} \left[ -\frac{1}{2} \right]_{x=0}^{\infty} = 3e^{-3y}$

(for $y>0$)

This method works in general if you have the joint density of $X$ and $Y$ but just want the single variable density of $X$ or of $Y$. 
