Problem # 1 (30) Let random variable X have PDF:

$$f_X(x) = \frac{2}{x^3}u(x-1),$$

where $u(x)$ is the standard unit step function.

a) Let Y be defined as $Y = 1/X$. Find its probability density function $f_Y(y)$?

b) Let $Z = \log_e(X)$. Find its PDF $f_Z(z)$.