$$Z \sim \frac{f(x)}{2} = \frac{1}{\sqrt{2\pi}} e^{-x^2/2}$$

$$|Z| \sim \frac{2}{\sqrt{2\pi}} e^{-x^2/2}, \quad 0 \le x \qquad Y \sim \underbrace{e^{-x}}_{g(x)}$$

$$\max f(x)/g(x) = \max \frac{2}{\sqrt{2\pi}} e^{-x^2/2 + x} \iff \max -\frac{x^2}{2} + x : x = 1$$

$$\Rightarrow \max f(x)/g(x) = \frac{2}{\sqrt{2\pi}} e^{1/2} = \sqrt{2e/\pi} =: c$$

$$f(x)/cg(x) = \exp\left\{ -\frac{(x-1)^2}{2} \right\}$$