Задача 2

$$f(x) = g e^{-x^2 + 6x + 3} =$$

$$= g e^{-(x^2 - 6x - 3)} = g e^{-(x-3)^2 + 6 \cdot 2}$$

$$= g e^{12} \cdot e^{-(x-3)^2}$$

$$a = 3$$

$$2\sigma^2 = 1 \Rightarrow \sigma^2 = \frac{1}{2}$$

$$g \cdot e^{12} = \frac{1}{\sigma\sqrt{2\pi}}$$

$$g = \frac{2}{\sqrt{\pi}} e^{-12} = \frac{1}{e^{12}\sqrt{\pi}}$$

$$M(X) = a = 3$$

$$D(X) = \sigma^2 = \frac{1}{2}$$