

a) Calculate sigma

$$1000 - 160 = \frac{840}{84} = \frac{10}{2} = 5$$

Calculate the prob of being in 4 sigma

$$P(X) = \int_{-4}^4 \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$$

$$= 0.9999366$$

b) I think this wouldn't be perceived as if it were placed in the middle, people would reject it as a lot of points don't fall within the histogram