

$$a) \left. \begin{array}{l} \text{Pinto-ale: } 0,25 \\ \mu = 127,4 \\ \sigma = 1,8 \end{array} \right\} \rightarrow 126,1859 (=a)$$

$$\left. \begin{array}{l} \text{Pinto-ale: } 0,75 \\ \mu = 127,4 \\ \sigma = 1,8 \end{array} \right\} \rightarrow 126,61408 (=b)$$

14.9 \underline{x} : koulumatkan kesto (min), $\underline{x} \sim N(28, 5)$

$$P(\text{ehtii tunnille}) = P(\underline{x} \leq 35) = p$$

a) $P(\text{ehtii 5 kertaa tunnille}) = p \cdot p \cdot p \cdot p \cdot p = p^5$

b) $P(\text{myöhästyy ainakin kerran}) = 1 - P(\text{ehtii 5 kertaa tunnille})$

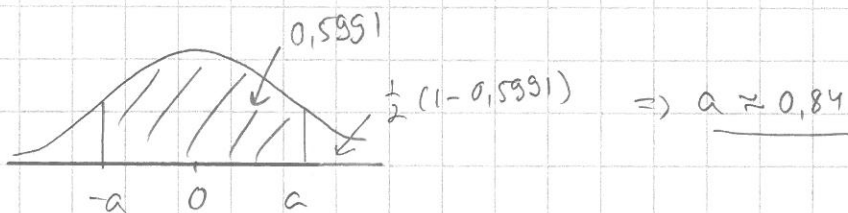
14.20

15. Normaalinen normaalijakauma $N(0, 1)$

$$\underline{z} \sim N(0, 1) \Rightarrow \begin{cases} E(\underline{z}) = 0 \\ D(\underline{z}) = 1 \end{cases}$$

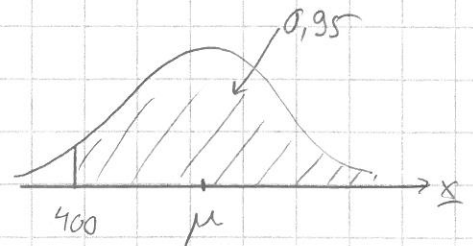
$$\underline{x} \sim N(\mu, \sigma) \Rightarrow \underline{z} = \frac{\underline{x} - \mu}{\sigma} \sim N(0, 1)$$

15.2 c)



15.6 \underline{x} : myyjäisristin moka, $\underline{x} \sim N(\mu, 12)$

$$P(\underline{x} \geq 400) = 0,95$$



$$\Rightarrow P(\underline{x} \geq 400) = P\left(\frac{\underline{x} - \mu}{12} \geq \frac{400 - \mu}{12}\right) = P(\underline{z} \geq a) = 0,95$$

$\underline{z} \sim N(0, 1) \quad a$

$$a \approx -1,64885 \text{ (geogebra)}$$

$$a = \frac{400 - \mu}{12} \quad | \cdot 12$$

