

5.9

$$X \sim N(110; 10^2)$$

$$a) \quad P(X > 125) = P(Z > 1,5)$$

$$\frac{125 - 110}{10} = 1,5$$

$$P(Z > 1,5) = 1 - P(Z < 1,5)$$

$$= 1 - 0,9332$$

$$\cong 0,0668 = 6,68\%$$

$$b) \quad P(95 < X < 125) = P(-1,5 < Z < 1,5)$$

$$\frac{95 - 110}{10} = -1,5$$

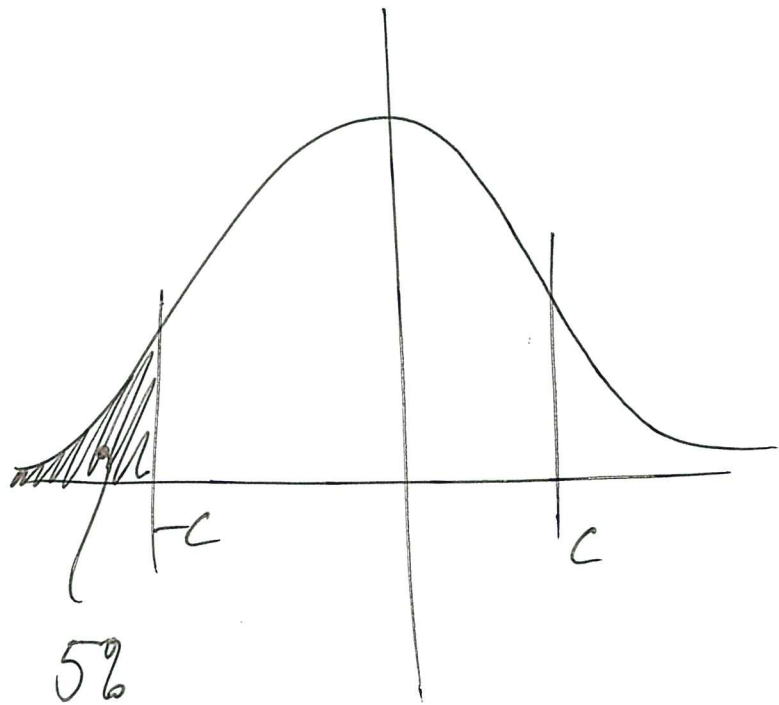


$$P(Z < 1,5) - (1 - P(Z < 1,5))$$

$$= 0,9332 - (1 - 0,9332)$$

$$= 0,8664 = 86,64\%$$

5.9₂



$$P(Z < -c) = 1 - P(Z < c) = 0,05$$

$$\Rightarrow P(Z < c) = 0,95 \quad c \approx 1,65$$

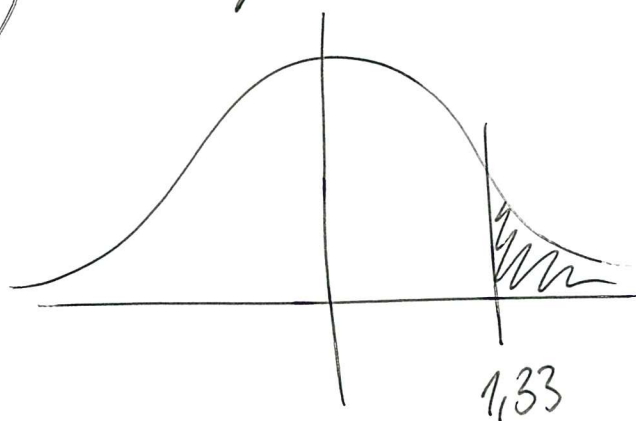
$$\Rightarrow -1,65 = \frac{X - 110}{10}$$

$$X - 110 = -16,5 \quad X = 110 - 16,5 \\ = \underline{\underline{93,5}}$$

Le semil doit être fixé à environ
93,5 h soit 93 h et 30 min.

5.10

a) Il part 20 minutes avant.



$$\frac{20-16}{3} = \frac{4}{3} \approx 1,33$$

$$P(Z > 1,33) = 1 - P(Z < 1,33)$$

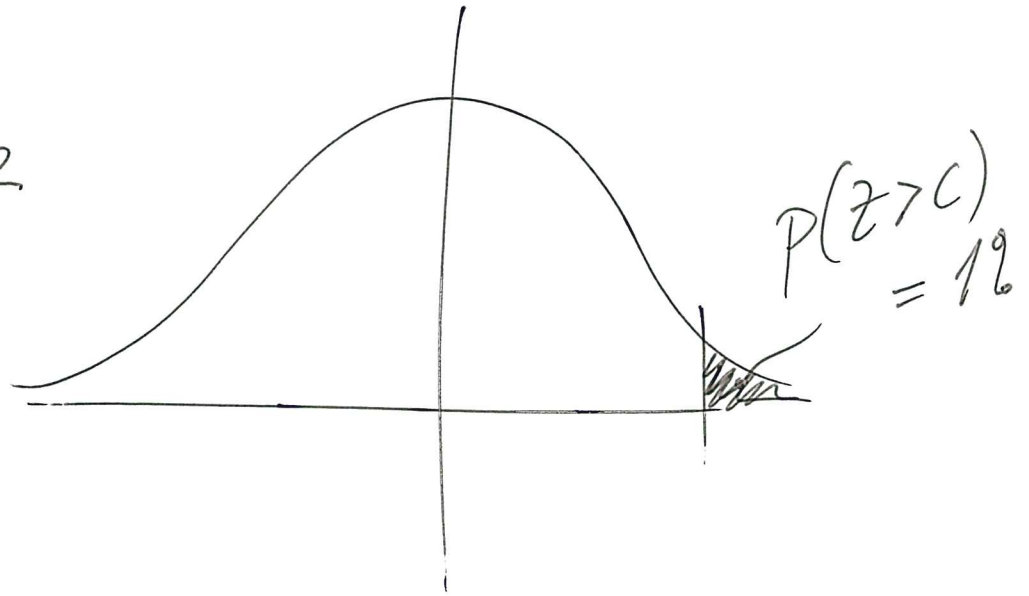
$$= 1 - 0,9082$$

$$= 0,0918 = 9,18\%$$

La probab. de rater le train vaut $\approx 9,2\%$

$$\boxed{5.10}^2$$

b)



$$\Rightarrow P(Z < c) = 99\% = 0,99$$

$$\Rightarrow c \approx 2,33$$

$$\Rightarrow 2,33 = \frac{X - 16}{3}$$

$$\Rightarrow X = 6,99 + 16 = 22,99 \approx 23$$

H doit partir au moins 23 minutes avant le départ de son train.

A' 7h12 au plus tard, donc.