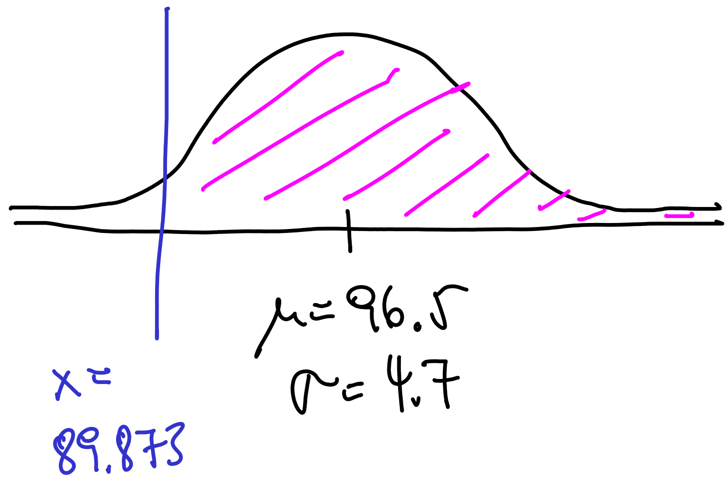
(5)



$z = -1.41$

$x = z \cdot \sigma + \mu =$

89.873

92% of the time, the factory worker produces more than 89.873 units in an hour.

(1) $z = -0.81$ $\quad x = -0.81 \cdot 5.8 + 91.1 = 86.402$

79% of the time, the factory worker produces more than 86.402 units in an hour.

(2) $z = -1.28$ $\quad x = -1.28 \cdot 12 + 140 = 124.64$

The best before date should be set to 124.64 hours after production.

(4) $P(X=4) = \text{dbinom}(4, 5, \frac{9}{13}) = \text{dbinom}(4, 5, 0.6923)$

The probability that the weather was good enough on exactly four days is 0.35341.

(3) $\text{ppois}(3, 5.28) = 0.22790$

The probability of strictly less than four interruptions is 0.22790.

(5) $\mu = 800 \cdot 0.012 = 9.6$

$\sigma = \sqrt{800 \cdot 0.012 \cdot 0.988} = 3.07974$

The probability that 12 or more units are spoiled is 0.2676.

$\underset{\text{BINOM}}{P(X \geq 12)} = \underset{\text{NORM}}{P(X > 11.5)} = 1 - P(X \leq 11.5) = 1 - 0.7324$

$= 0.2676$

$z = \frac{11.5 - 9.6}{3.07974} = 0.62$