1)

Let X be repersents the length of the bolts (in mm).

given that,

μ=40 & σ=10

we have by CLT,

z=

{x-mu}/{sigma}

Here we have to find the % chance that a product produced will be above 43mm?

i.e.

P(x>43)

p((x-mu)/sigma>(43-mu)/sigma)

p(z>(43-40)/10)

Explannation:

By using z critical value table

Let, X be normal random variable with mean 65 and standard deviation 5

i.e. μ=65 & σ=5

we have,

z=

{x-mu}/{sigma}

where Z is standard normal variable.

.

i.e.

We know that,

the empirical rule is states that,

68% of the data falls within one standard deviation, 95% percent within two standard deviations, and 99.7% within three standard deviations from the mean.

Explanation

Under this rule, 68% of the data falls within one standard deviation, 95% percent within two standard deviations, and 99.7% within three standard deviations from the mean.

Step 2 of 2

Here we have to find the percentage of scores between 55 and 75

i.e.

P(55<x<75)=P(55−μσ<x−μσ<75−μσ)=P(55−655<Z<75−655)=P(−2<Z<2)P(55<x<75)=95%

Explanation

The Empirical Rule states that **95% of data observed following a normal distribution lies within 2 standard deviations of the mean**

**Final Answer**

**Ans:Option D) 95%**

**By the empirical rule for normal distribution.**