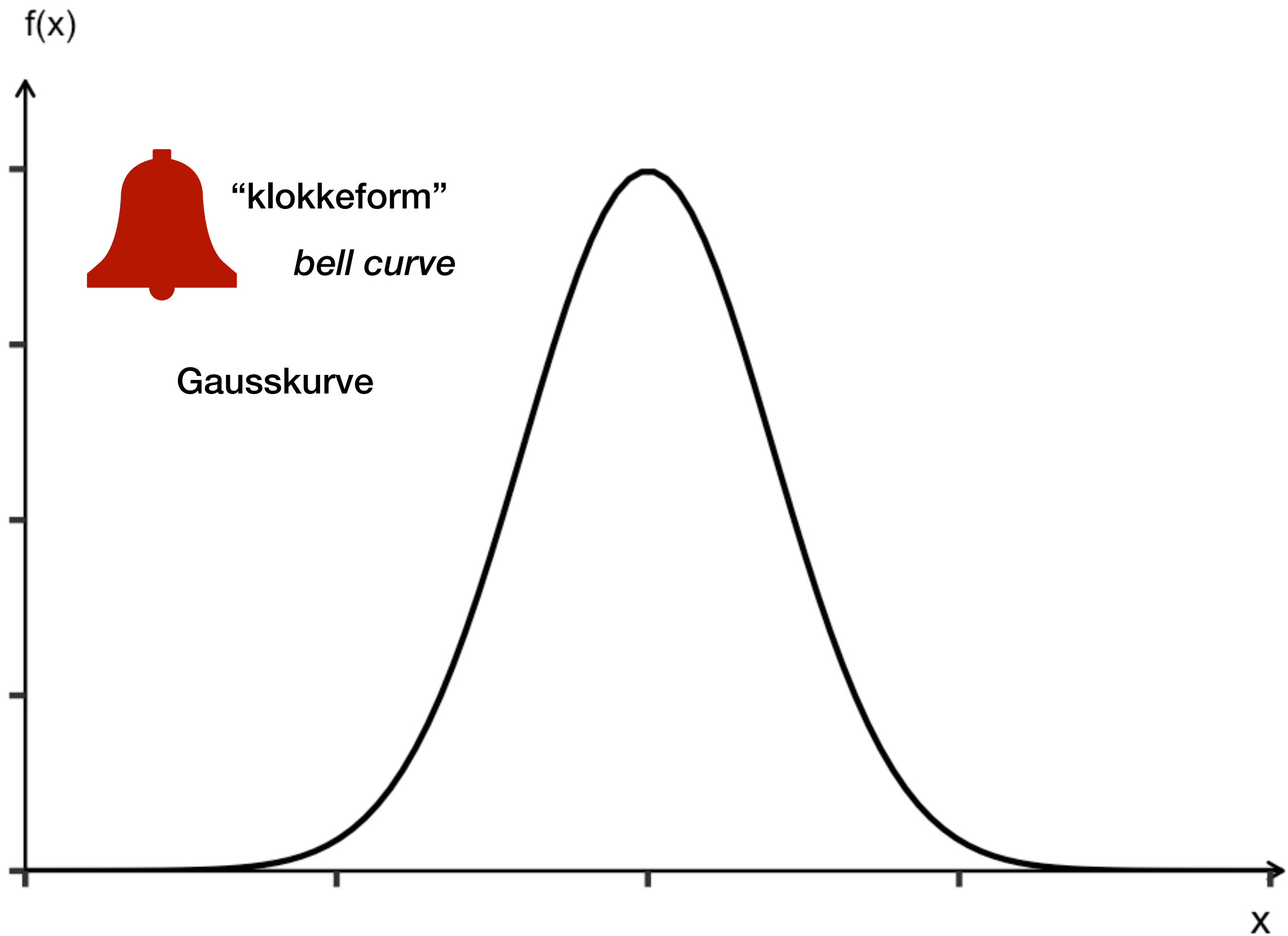
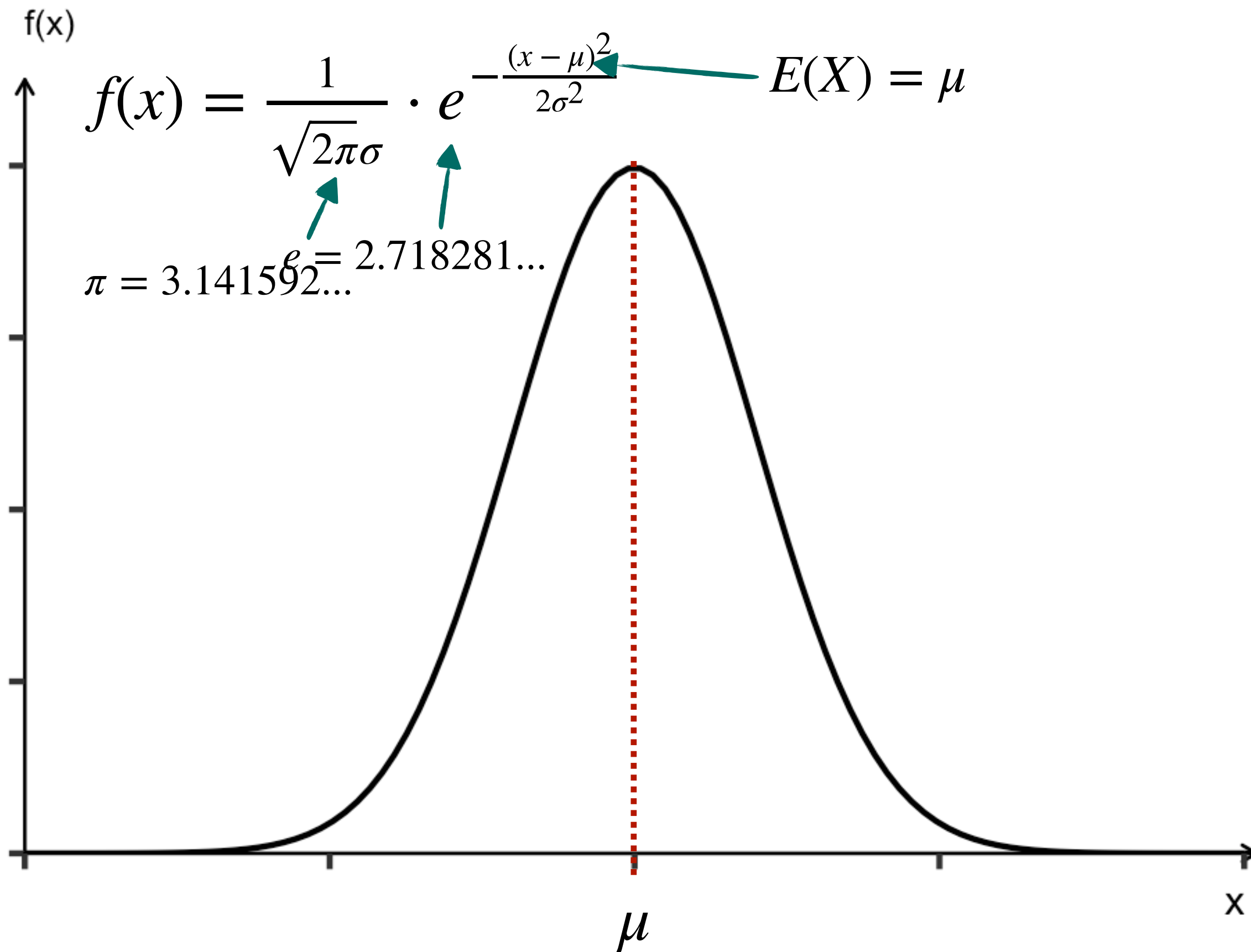
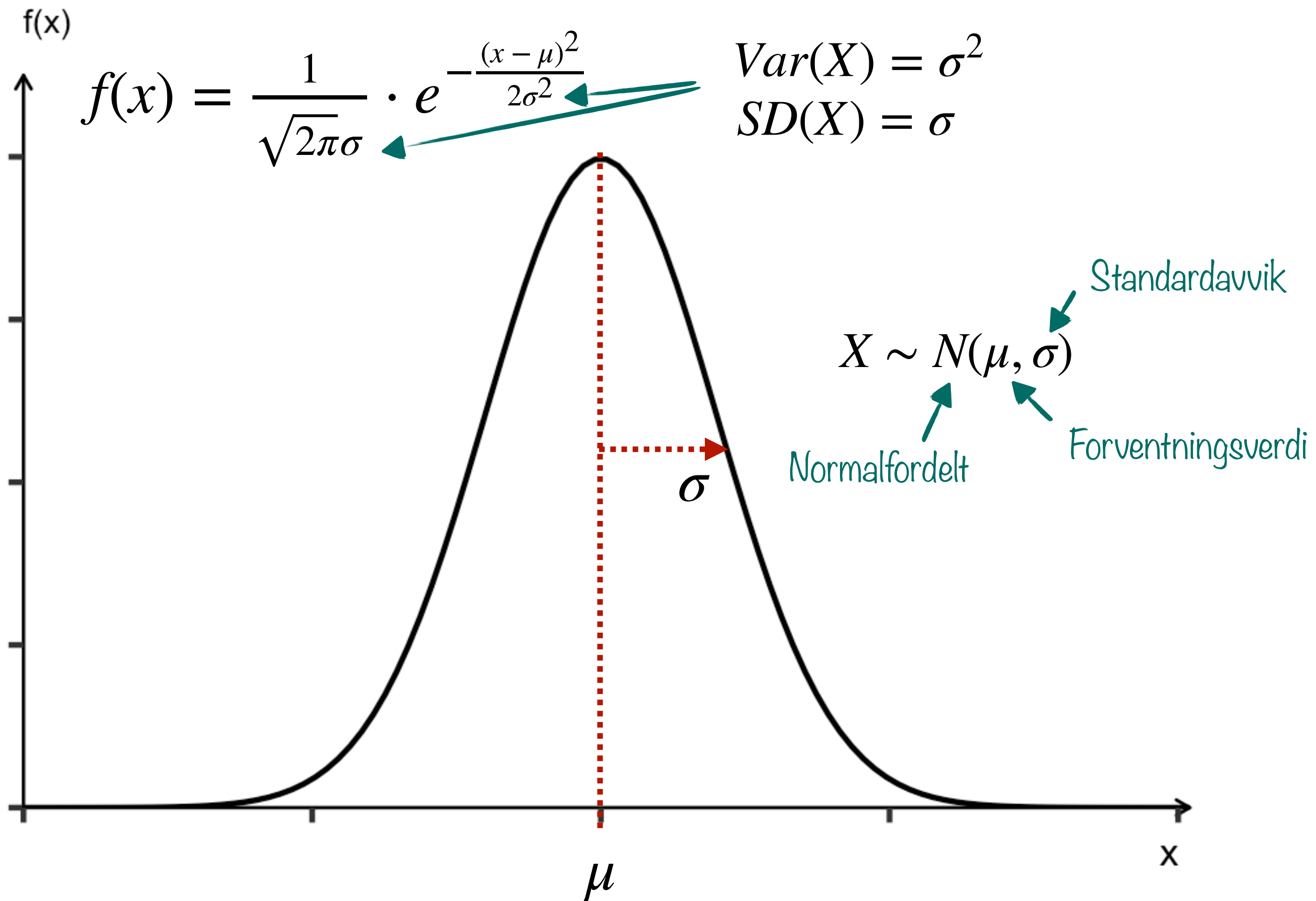


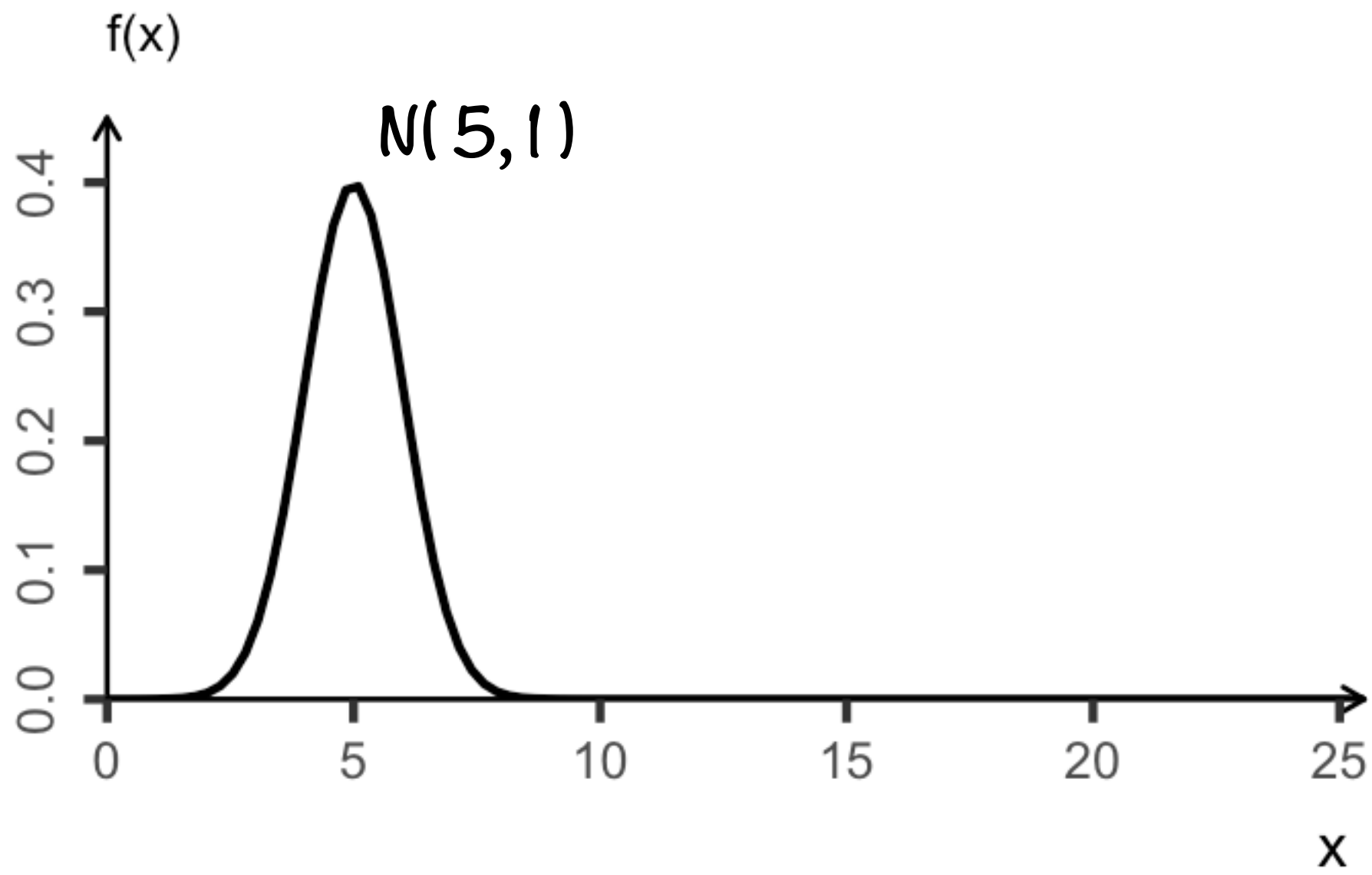
# Normalfordelingen

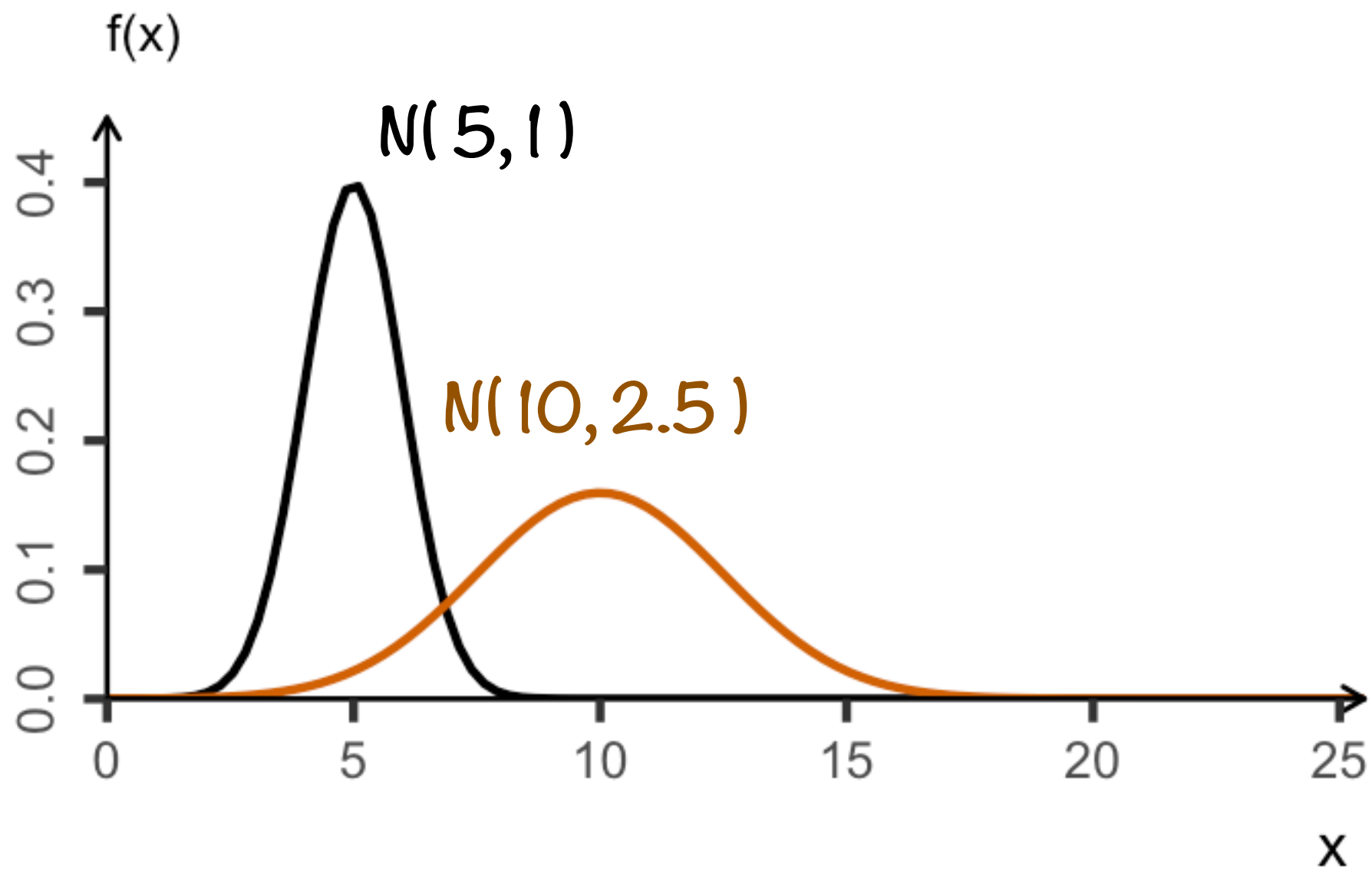
Thea Bjørnland  
Institutt for matematiske fag  
NTNU

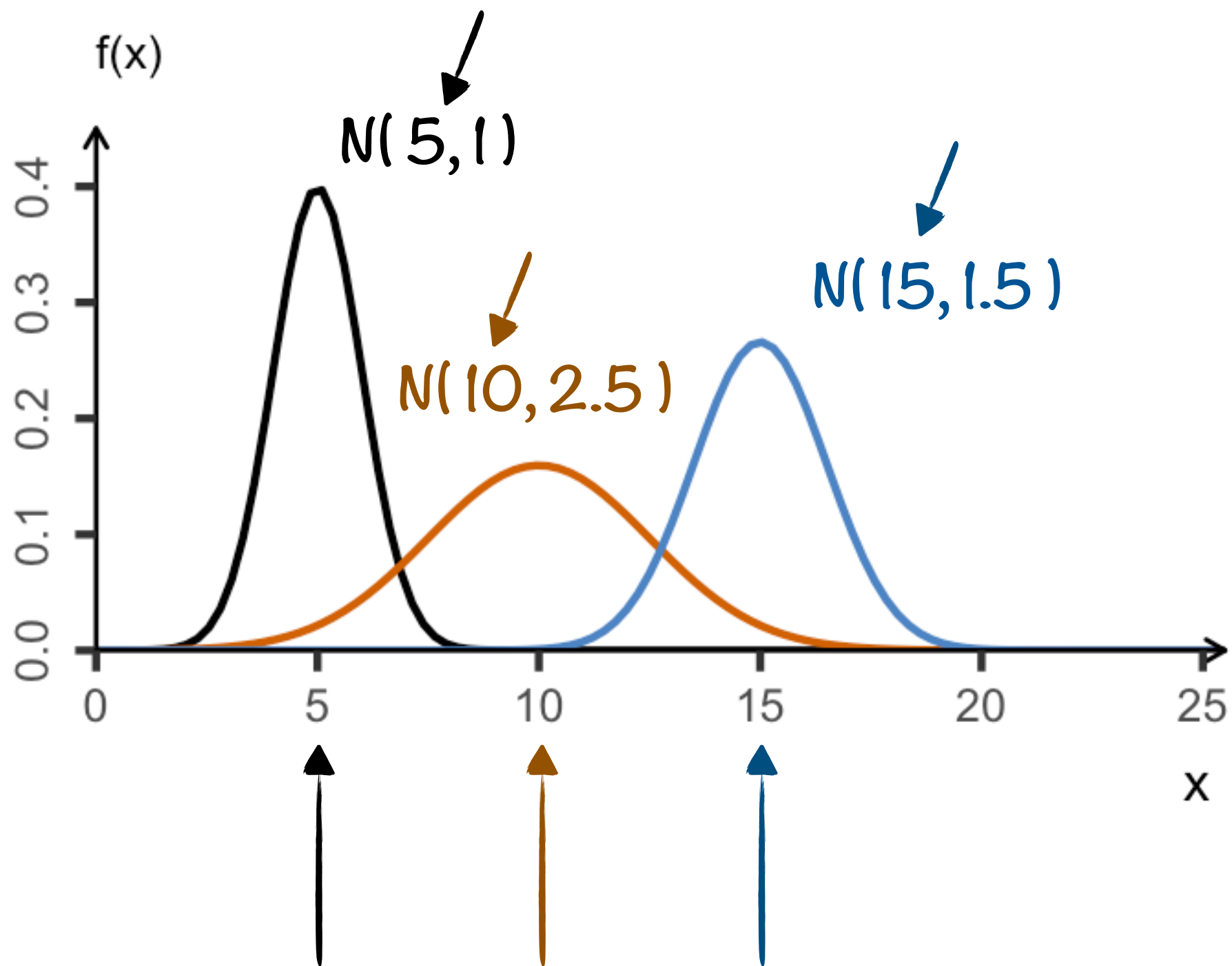


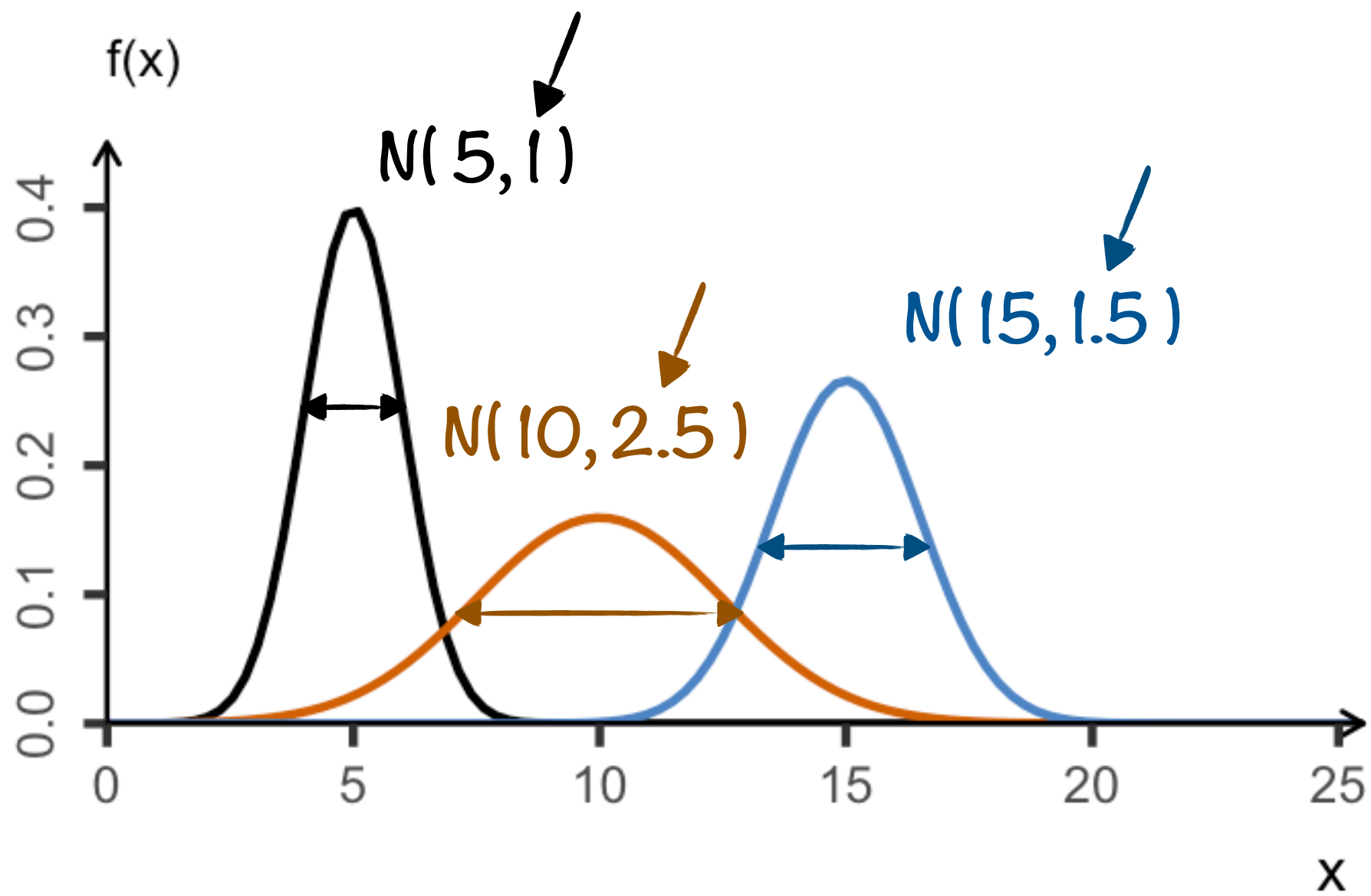










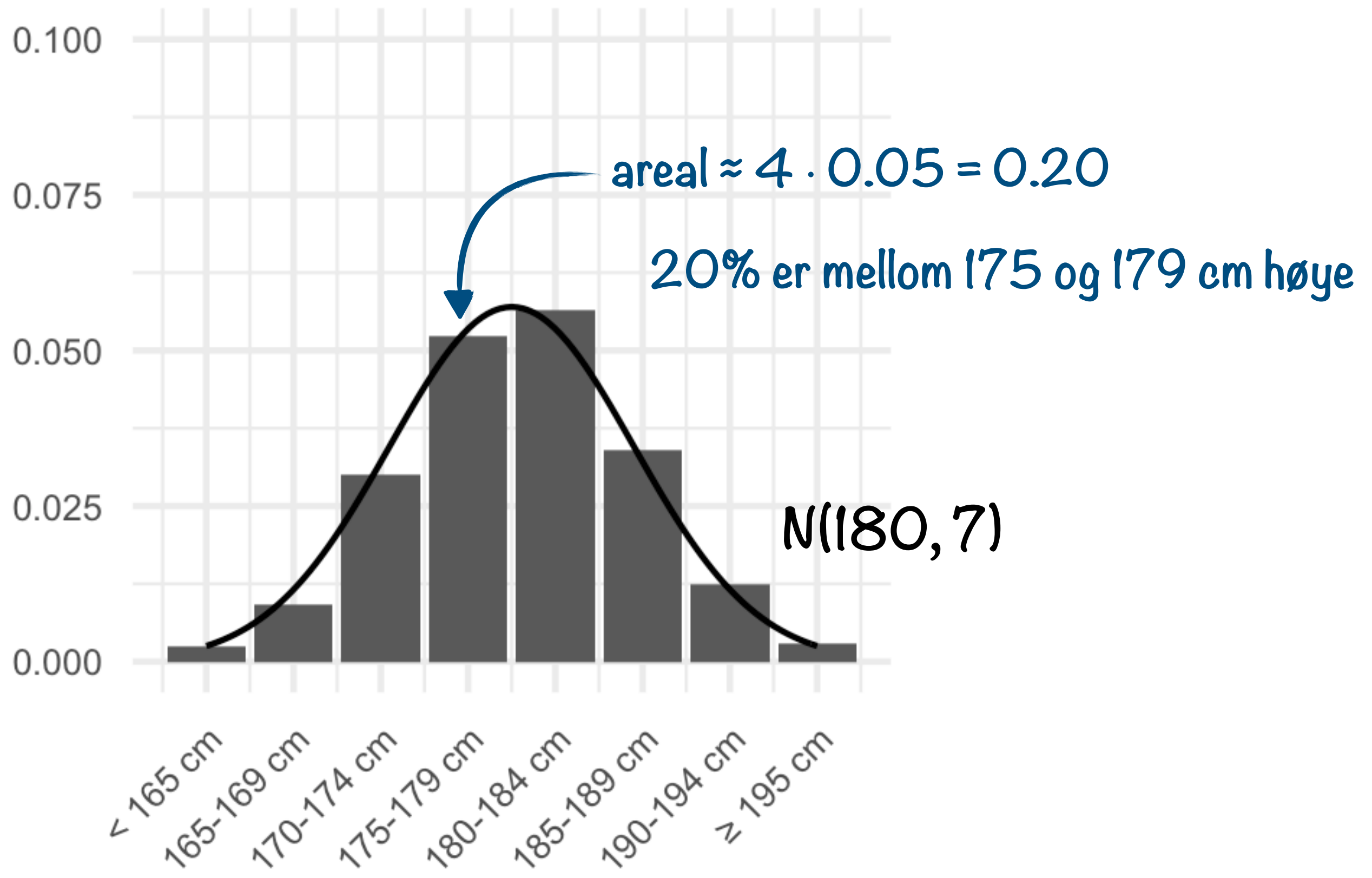


$(-\infty, \infty)$

# Eksempel: Høyde

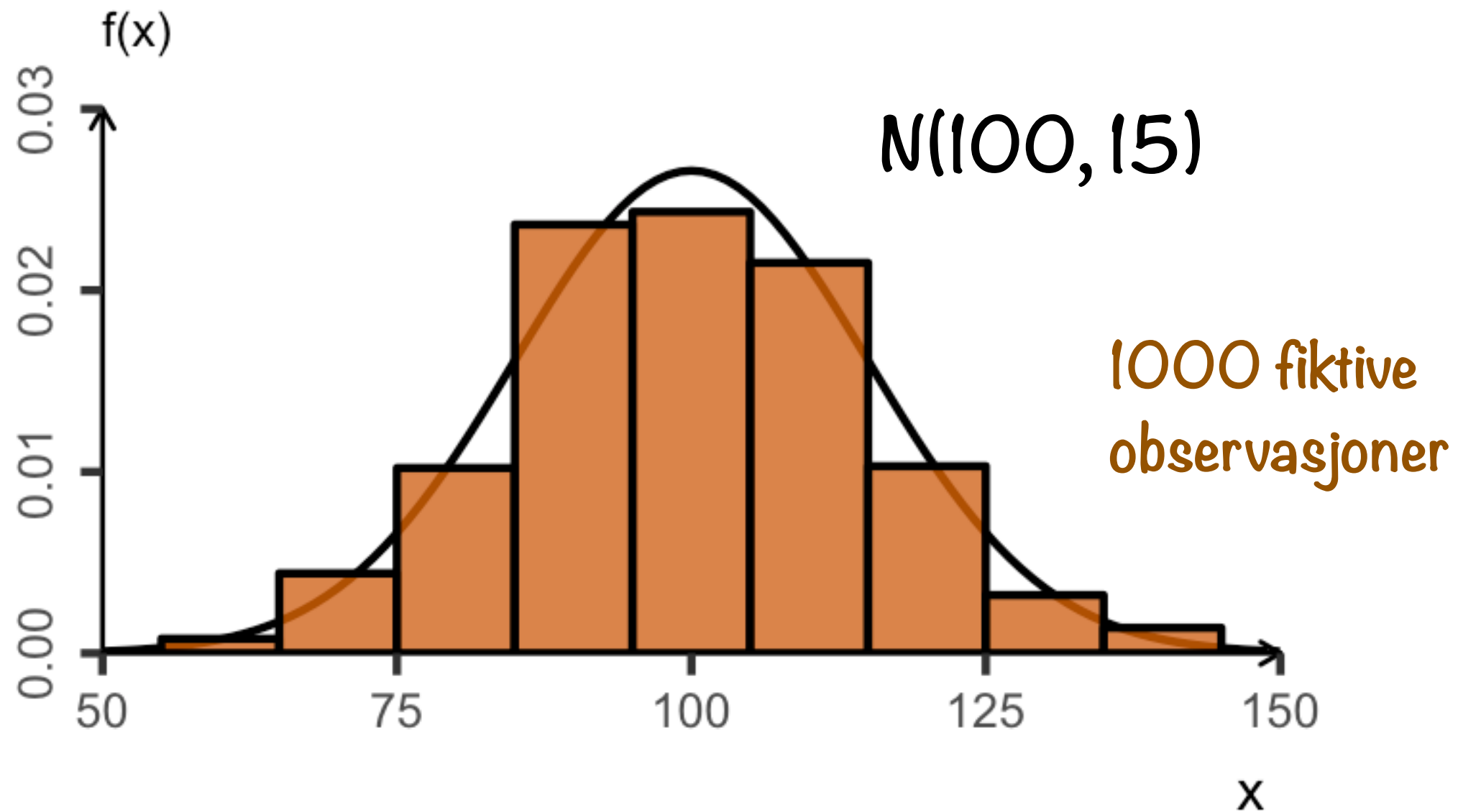
Kilde: [ssb.no](https://www.ssb.no/a/histstat/tabeller/4-22.html) og vernepliktsverket

<https://www.ssb.no/a/histstat/tabeller/4-22.html>



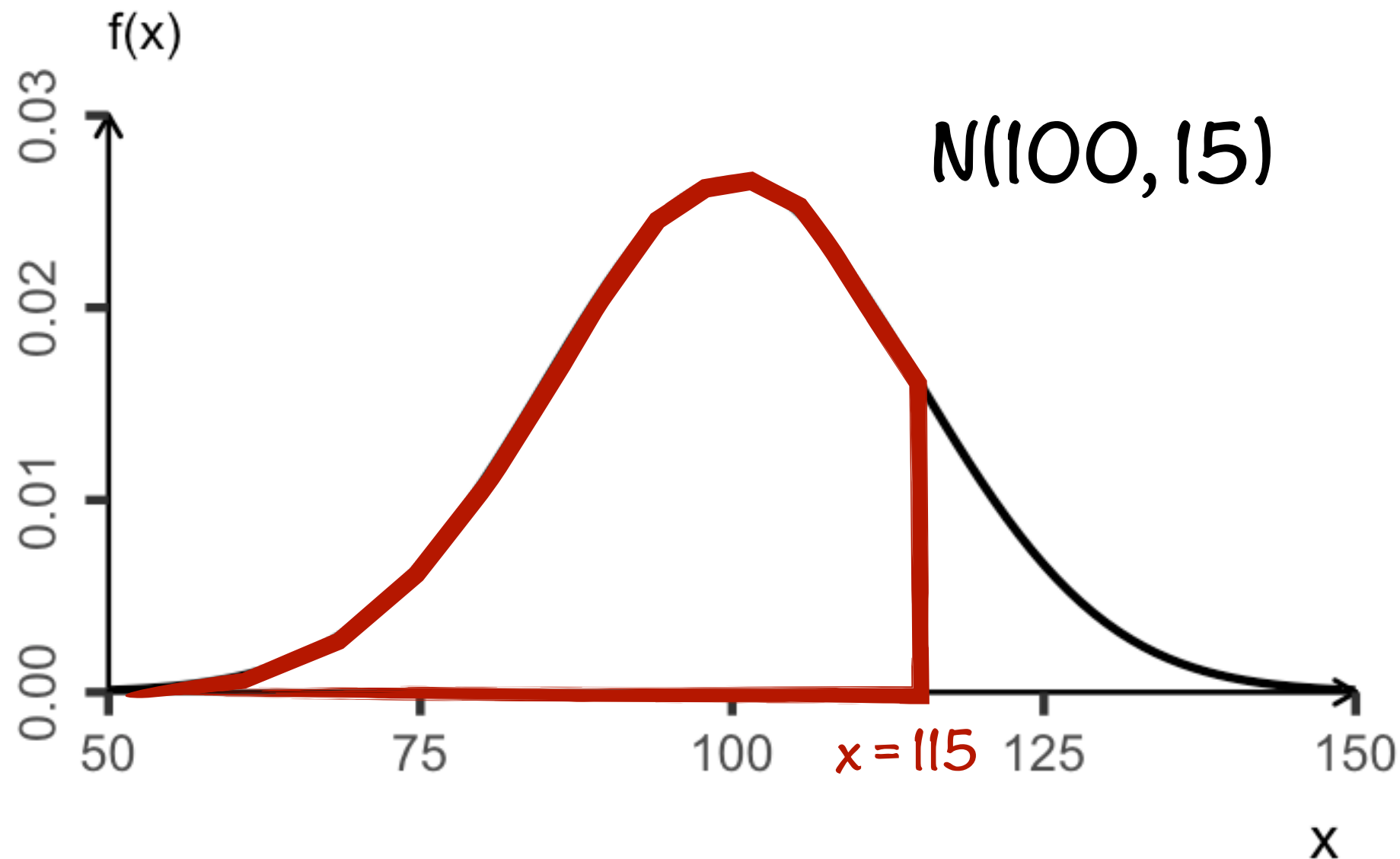
# Eksempel: IQ-tester

Kilder: <https://snl.no/IQ> og  
<https://www.mensa.no/iq/>



# Eksempel: IQ

Kilder: <https://snl.no/IQ> og  
<https://www.mensa.no/iq/>

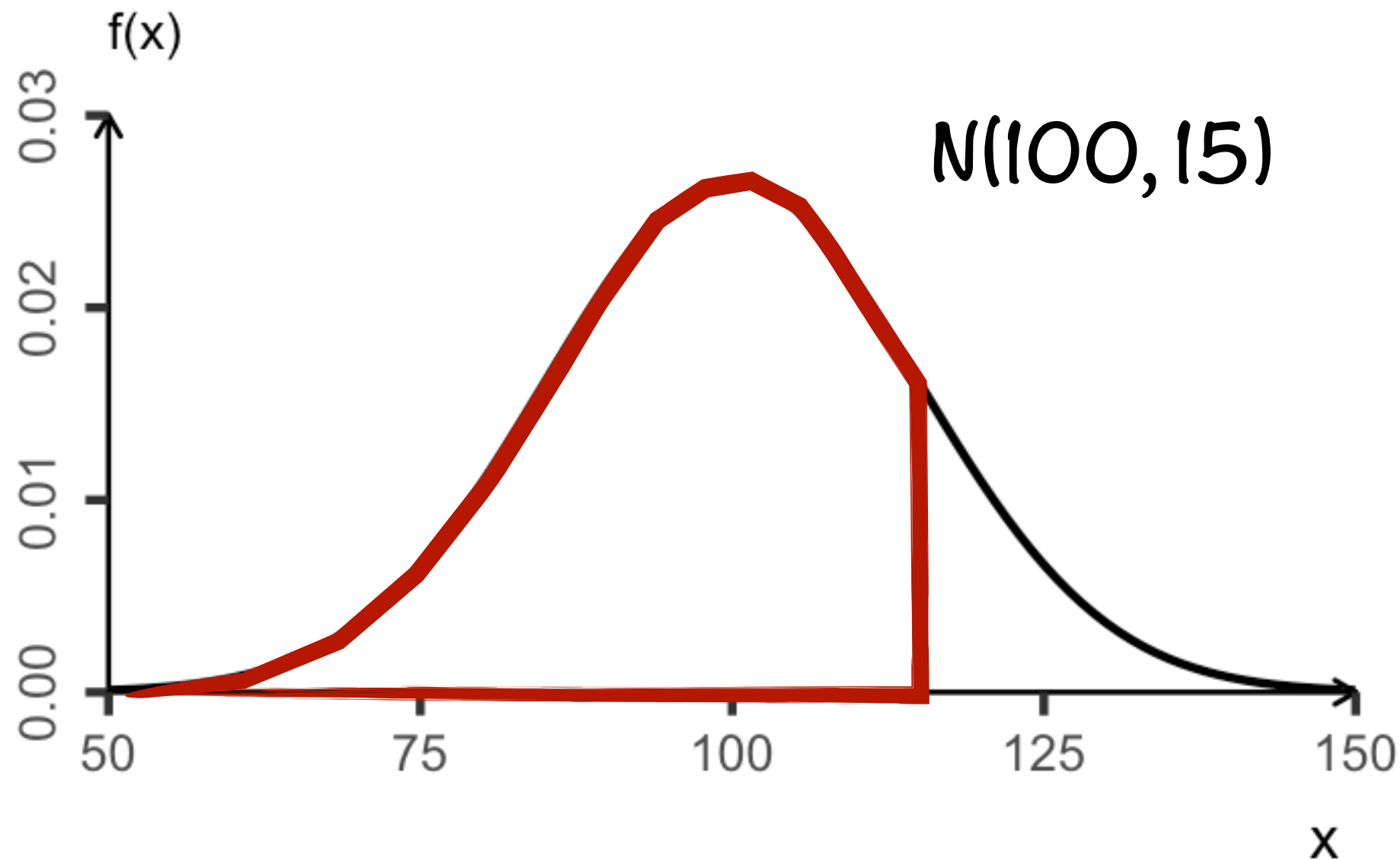


$$P(X \leq 115) = ?$$

$$F(115) = \int_{-\infty}^{115} \frac{1}{\sqrt{2\pi} \cdot 15} \cdot e^{-\frac{(x-100)^2}{2 \cdot 15^2}} dx$$

# Eksempel: IQ

Kilder: <https://snl.no/IQ> og  
<https://www.mensa.no/iq/>



$$P(X \leq 115) = ?$$

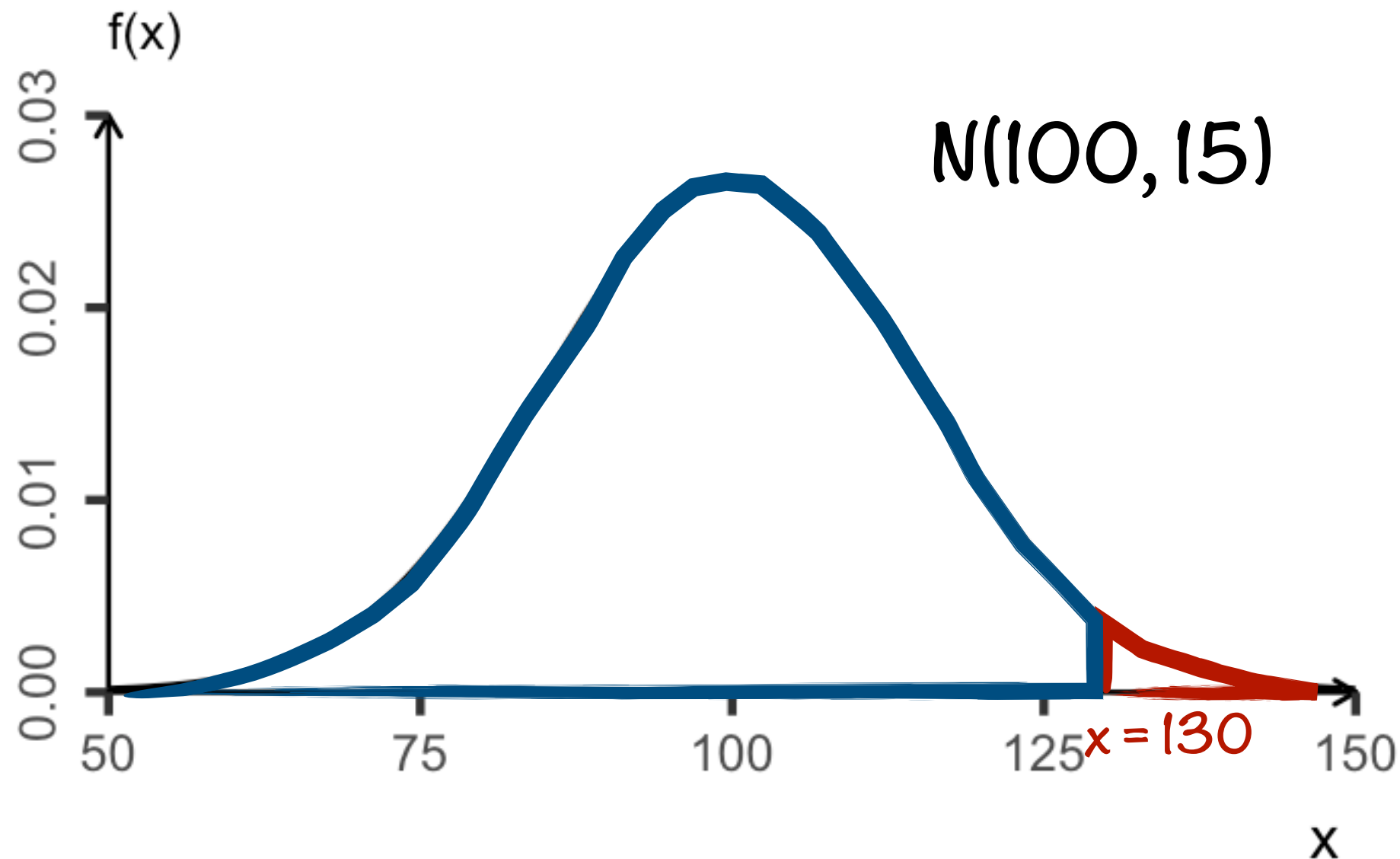
```
from scipy import stats
```

```
stats.norm.cdf(115, 100, 15)
```

```
0.8413447460685429
```

# Eksempel: IQ

Kilder: <https://snl.no/IQ> og  
<https://www.mensa.no/iq/>



$$p(X > 130) = ?$$

$$p(X > 130) = 1 - p(X \leq 130)$$

```
from scipy import stats
```

```
1 - stats.norm.cdf(130, 100, 15)
```

```
0.02275013194817921
```