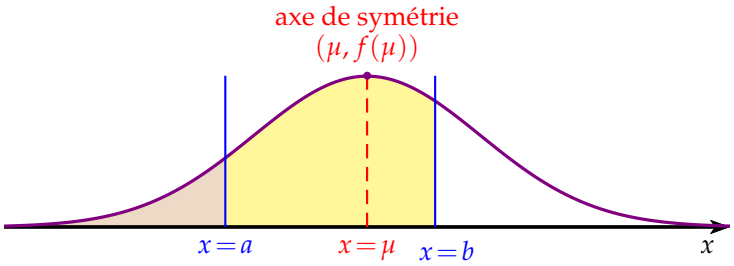
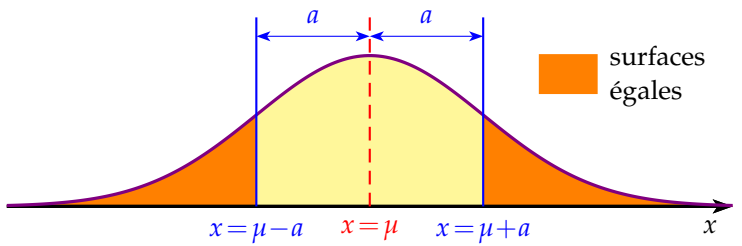
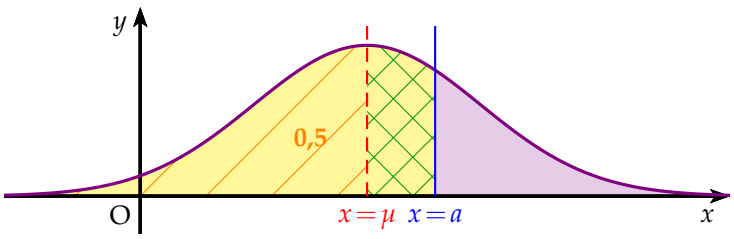
Propriétés de la loi normale $\mathcal{N}(\mu, \sigma^2)$



$$p(a \leqslant X \leqslant b) = p(a < X < b)$$
$$= p(X \leqslant b) - p(X \leqslant a)$$
$$= \underbrace{1}_{\text{aire totale}} \underbrace{-}_{\text{sauf}} p(X \leqslant a) - p(X \geqslant b)$$

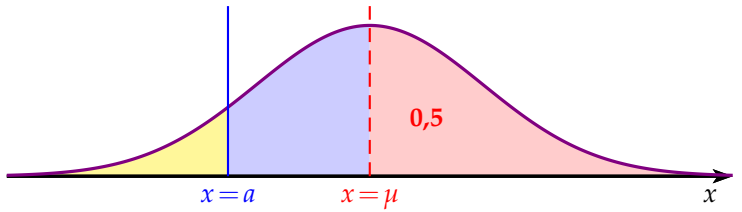


$$p(\mu - a \leqslant X \leqslant \mu + a) = p(X \leqslant \mu + a) - p(X \leqslant \mu - a)$$
$$= 1 - 2p(X \leqslant \mu - a)$$
$$= 1 - 2p(X \geqslant \mu + a)$$



$$p(X \leqslant a) = p(X < a)$$
$$= 0{,}5 + p(\mu \leqslant X \leqslant a)$$
$$= 1 - p(X \geqslant a)$$
$$= 1 - p(X > a)$$

$$p(X \geqslant a) = 0{,}5 - p(\mu \leqslant X \leqslant a)$$
$$= p(X > a)$$



$$p(X \leqslant a) = p(X < a)$$
$$= 0{,}5 - p(a \leqslant X \leqslant \mu)$$
$$= 0{,}5 - p(X \geqslant a)$$

$$p(X \geqslant a) = p(a \leqslant X \leqslant \mu) + 0{,}5$$
$$= 1 - p(X \leqslant a)$$