

n°128 p350 X suit la loi uniforme sur $[10; 60]$

$$1) P(X < 45) = P(10 < X < 45) = \frac{45-10}{60-10}$$

$$P(X < 45) = \frac{35}{50}$$

$$P(X < 45) = 0,7$$

$$2) E(X) = \int_{10}^{60} x f(x) dx \quad \text{avec} \quad f(x) = \frac{1}{50}$$

$$E(X) = \frac{1}{50} \int_{10}^{60} x dx$$

$$E(X) = \frac{1}{50} \left[\frac{x^2}{2} \right]_{10}^{60}$$

$$E(X) = \frac{1}{100} (60^2 - 10^2) \quad E(X) = 35$$

$$\text{Plus simple: } E(X) = \frac{a+b}{2} = \frac{10+60}{2} = 35$$