Ex 1 :

1. $\Omega = \{(1,1,1) ; (1,1,2) ; (1,2,1) ; (1,2,2) ; (2,1,1) ; (2,1,2) ; (2,2,1) ; (2,2,2)\}$

Montage prévu → $(2,2,1)$

$$P((2,2,1)) = \frac{1}{8}$$

2. Exemple : $X((2,2,1)) = 2+2+1 = 5$

$X((1,1,1)) = 3$ $\quad X((1,1,2)) = 4$

$X((1,2,1)) = 4$ $\quad X((1,2,2)) = 5$

$X((2,1,1)) = 4$ $\quad X((2,1,2)) = 5$

$X((2,2,1)) = 5$ $\quad X((2,2,2)) = 6$

La loi de probabilité de X :

x_i	3	4	5	6
$P(X=x_i)$	$1/8$	$3/8$	$3/8$	$1/8$

3. $P(X \leq 4) = \frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$

4. $E(X) = \sum_i p_i x_i = \frac{3}{8} + \frac{12}{8} + \frac{15}{8} + \frac{6}{8} = 4{,}5$

$$V(X) = \frac{9}{8} + \frac{16 \times 3}{8} + \frac{25 \times 3}{8} + \frac{36}{8} - 4{,}5^2 =$$

$$= \frac{9}{8} + \frac{48}{8} + \frac{75}{8} + \frac{36}{8} - 4{,}5^2 =$$

$$= 21 - 4{,}5^2 = 21 - 20{,}25 = 0{,}75$$

$$\sigma(X) = \sqrt{V(X)} = \sqrt{0{,}75} = 0{,}866$$