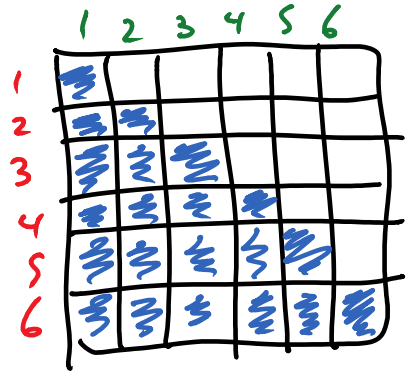
Counting: Recall if sample space S has equally likely outcomes, and S has finite size, then an event A has probability

$$P(A) = \frac{|A|}{|S|} = \frac{\#\text{ of outcomes in } A}{\#\text{ of outcomes in } S}.$$

Roll 2 dice

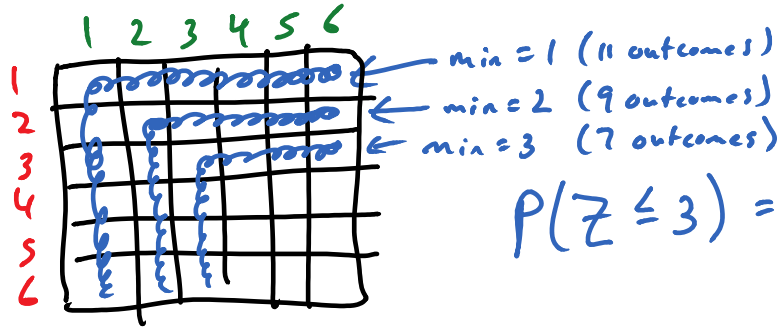


Let X denote the result on the red die
Let Y denote the result on the green die.

$$P(X \geq Y) = \frac{|A|}{|S|} = \frac{21}{36} = \frac{7}{12}$$

"A" denote the event that $X \geq Y$
i.e. that the outcome ω makes $X(\omega) \geq Y(\omega)$

Another example: Let $Z = \min(X, Y)$. Find $P(Z \leq 3)$.



$$P(Z \leq 3) = \frac{27}{36} = \frac{3}{4}$$