

Probability

Impossible > 0 **example:** number 8 in a dice or $3+3=8$

Certain > 1 **example:** $1+1=2$ (always happens)

As likely as not $> 1/2$ **example:** a coin can be a head or tail

What are the chances of (s.th)?

$P(A) = \frac{\text{outcomes}}{\text{total outcomes}}$

Example: odd numbers on a dice?

Outcomes: 1-3-5 (3 numbers)

Total outcomes: 1-2-3-4-5-6 (6 numbers)

Answer: $3/6$ or $1/2$

Question: what is the probability of getting a sum of 9 when two dice are thrown?

Total outcomes: $6 \times 6 = 36$

Outcome: (4-5) (5-4) (3-6) (6-3) 4 kinds

Answer: $4/36$ or $1/9$

