Tools of Chance

Use the coin, die, or card shown to find each probability.

Name _____ **Date** _____

Show your method

Write P(event) as favourable outcomes over total outcomes, then simplify. A standard deck has 52 cards (no jokers): 4 suits of 13 cards each.

Worked example

Find P(rolling a 3) on a fair die.

Face 3

Favourable outcomes: 1 (rolling a 3)
Total outcomes: 6
$P(3) = \frac{1}{6}$

1. Find P(Tails).

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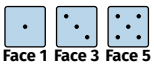
2. Find P(rolling an odd number).



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3. Find P(drawing an Ace).

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4. Find P(drawing a Diamond).

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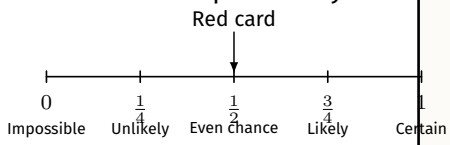
5. Where does "drawing a red card" sit? Find its probability.



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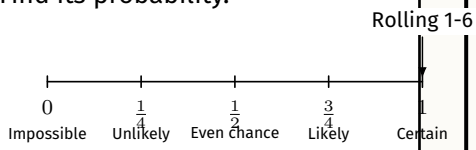
6. Where does "rolling 1 to 6" sit? Find its probability.



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7. Two coins are flipped. Find P(two Heads).

H = Heads; T = Tails; 1–6 = die.

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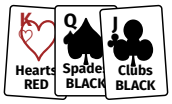
8. One of these three cards is picked at random. Find P(picking a Spade).



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9. What is P(drawing a black King) from a standard deck?

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Tools of Chance (continued)

Answer each question about coins, dice, and cards.

Name _____ **Date** _____

10. What is P(rolling a multiple of 3) on a fair die?

11. What is P(drawing a Jack)?

12. Is rolling a number less than 7 on a fair die certain, likely, unlikely, or impossible?

13. List the sample space when a coin is flipped and a die is rolled (12 outcomes).

14. Two dice are rolled. What is P(both show a 6)?

15. What is P(drawing a card that is a Queen or a King)?

16. A die is rolled 30 times. Based on theoretical probability, how many times would you expect an even number?

17. Are "drawing a Heart" and "drawing a Club" mutually exclusive? Explain.

18. What is P(NOT drawing a face card – Jack, Queen, or King)?