



Year 7 Mathematics Probability Practice Test 1

1. Classify each of the following statements as either true or false.
 - a It is likely that children will go to school next year.
 - b It is an even chance for a fair coin to display tails.
 - c Rolling a 3 on a 6-sided die and getting heads on a coin are equally likely.
 - d It is certain that two randomly chosen odd numbers will add to an even number
2. A fair 6-sided die is rolled.
 - a List the sample space.
 - b Find the probability of rolling a 3, giving your answer as a fraction.
 - c Find the probability of rolling an even number, giving your answer as a decimal.
 - d Find the probability of rolling a number less than 3, giving your answer as a percentage
3. When playing with a spinner with the numbers 1 to 4 on it, the following numbers come up:

1, 4, 1, 3, 3, 1, 4, 3, 2, 3.

 - a What is the experimental probability of getting a 3?
 - b What is the experimental probability of getting an even number?
 - c Based on this experiment, how many times would you expect to get a 3 if you spin 1000 times?
4. One card is chosen randomly from a standard deck of cards. What is the probability that it is:
 - a red?
 - b not red?
 - c a club?
 - d not a club?
 - e a 7?
 - f neither a 7 nor 8?
 - g a red ace?
 - h a red card or an ace?
 - i a red card that is not an ace?

- 5 A survey is conducted of 50 people, asking who likes coffee and who likes tea. It was found that 20 people liked both, 15 people liked coffee but not tea, and 10 people liked tea but not coffee.
- How many people liked neither tea nor coffee?
 - Represent the survey findings in a Venn Diagram.
 - How many people surveyed like tea?
 - How many people like both coffee and tea?
 - How many people like coffee or tea (or both)?
 - Represent the survey findings in a two-way table.
- 6 Consider the two-way table below showing the eating and sleeping preferences of different animals at the zoo..

	Eats meat	No meat	Total
Sleeps during day	20	12	32
Only sleeps at night	40	28	68
Total	60	40	100

- For a randomly selected animal, find:
 - $P(\text{sleeps only at night})$
 - $P(\text{eats meat or sleeps during day})$
 - If an animal is selected at random and it eats meat, what is the probability that it sleeps during the day?
 - What is the probability that an animal that sleeps during the day does not eat meat?
- 7 A spinner with the numbers 1, 2 and 3 is spun, and then a card is chosen at random from the letters ATHS.
- Draw a table to list the sample space of this experiment.
 - How many outcomes does the experiment have?
 - Find the probability of the combination 2S.
 - Find the probability of an odd number being spun and the letter H being chosen.

ANSWERS

1 a) true b) true c) false d) true

2 a) $S = \{1, 2, 3, 4, 5, 6\}$ b) $P(3) = 1/3$ c) $P(\text{even}) = 1/2$ d) 33.3%

3 a) $2/5$ b) $3/10$ c) 400 times

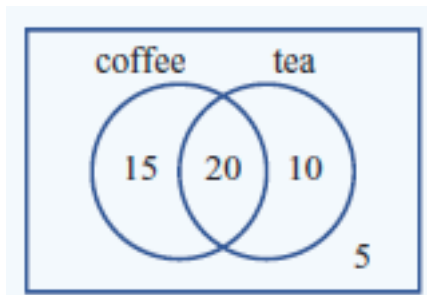
4 a) $P(\text{red}) = 1/2$ b) $P(\text{not red}) = 1/2$ c) $P(\text{club}) = 1/2$ d) $P(\text{not club}) = 3/4$

e) $P(7) = 1/13$ f) $P(\text{neither 7 or 8}) = 11/13$ g) $P(\text{red ace}) = 1/26$

h) $P(\text{red or ace}) = 7/13$ i) $P(\text{red but not ace}) = 6/13$

5 a) 5

b)



c) 30

d) 30

e) 45

6 a) i) $P(\text{sleeps only at night}) = 17/25$ ii) $P(\text{eats meat or sleeps during the day}) = 18/25$

b) $P(\text{sleeps during day and eats meat}) = 1/3$

c) $P(\text{sleeps during day and does not eat meat}) = 3/8$

7 a)

	A	T	H	S
1	1A	1T	1H	1S
2	2A	2T	2H	2S
3	3A	3T	3H	3S

b) There are 12 outcomes

c) $P(2S) = 1/12$

d) $P(\text{odd, H}) = 1/6$