Probability: Venn Diagrams & the Addition Rule (Grade 10)

WORKSHEET

Name: ..... Class: .....

Date: .....

MARK ____ / 22

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 A fair die is rolled. Find P(rolling a 4). (1)

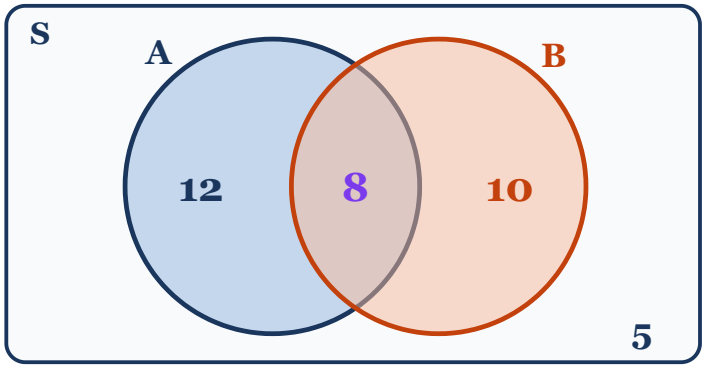
2 Find P(rolling an even number) on a fair die. (1)

3 If P(A) = 0,3 find P(not A). (1)

4 State the addition rule. (2)

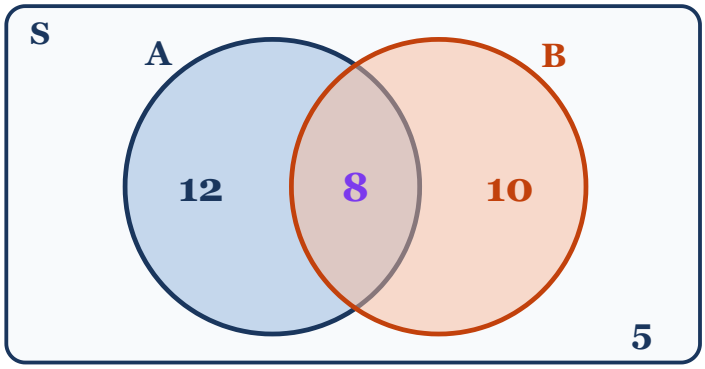
5 If A and B are mutually exclusive, what is P(A and B)? (1)

6 From the Venn diagram, find P(A and B). (2)



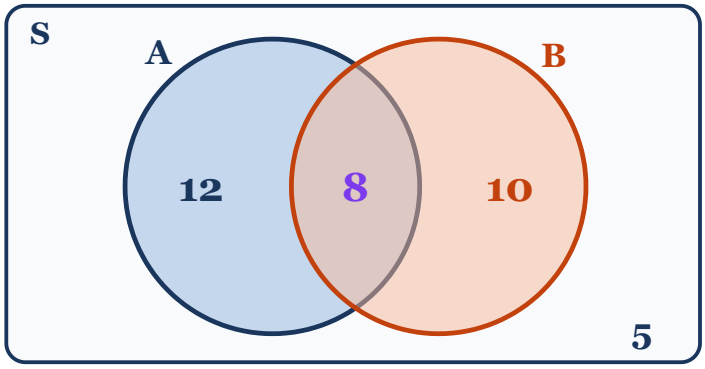
$n(\text{S}) = 35 \cdot n(\text{A}) = 20 \cdot n(\text{B}) = 18 \cdot n(\text{A and B}) = 8$

7 From the Venn diagram, find P(A or B). (2)



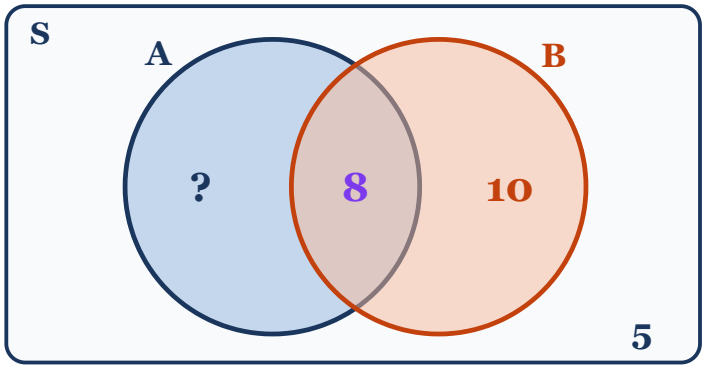
$n(\text{S}) = 35 \cdot n(\text{A}) = 20 \cdot n(\text{B}) = 18 \cdot n(\text{A and B}) = 8$

8 From the Venn diagram, find P(neither A nor B). (2)



$n(\text{S}) = 35 \cdot n(\text{A}) = 20 \cdot n(\text{B}) = 18 \cdot n(\text{A and B}) = 8$

9 $n(\text{A}) = 20$ and 8 are in both. How many take ONLY A? (2)



$n(\text{S}) = 35 \cdot n(\text{A}) = 20 \cdot n(\text{B}) = 18 \cdot n(\text{A and B}) = 8$

10 A die is rolled 90 times and a 5 comes up 12 times. Calculate the relative frequency of rolling a 5. (2)

11 For that same die, write down the theoretical probability of rolling a 5 and comment on the difference. **(2)**

12 What generally happens to the relative frequency as the number of trials becomes very large? **(2)**

13 Give ONE example of a situation where the probability CANNOT be found by counting equally likely outcomes, and say why. **(2)**

TOTAL: 22 marks

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