“and” versus inclusive/exclusive “or”

6 questions | 11 marks

Equivalent correct methods earn the corresponding marks.

1. List die results that are even and greater than 2. [1 mark]

Start with 2,4,6 and remove 2.

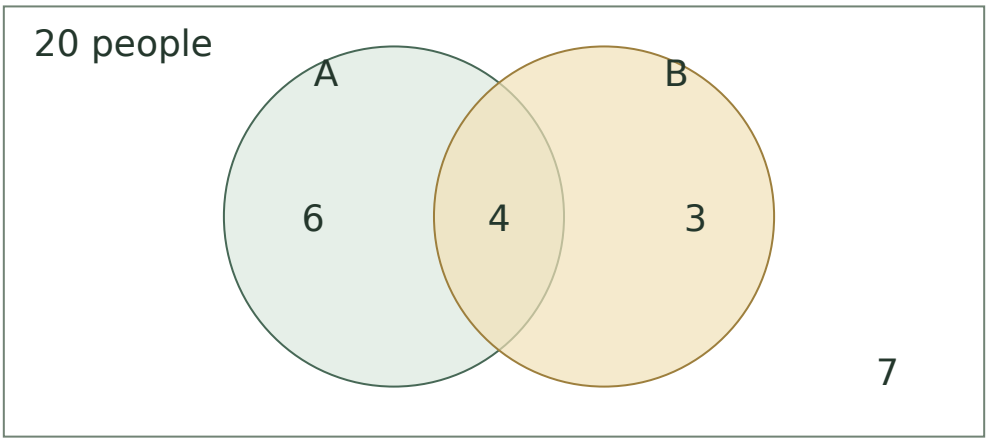
Answer: 4 and 6.

2. Find P(odd or a 6) for a fair die. [2 marks]

Favourable results are 1,3,5,6: four of six.

Answer: 2/3

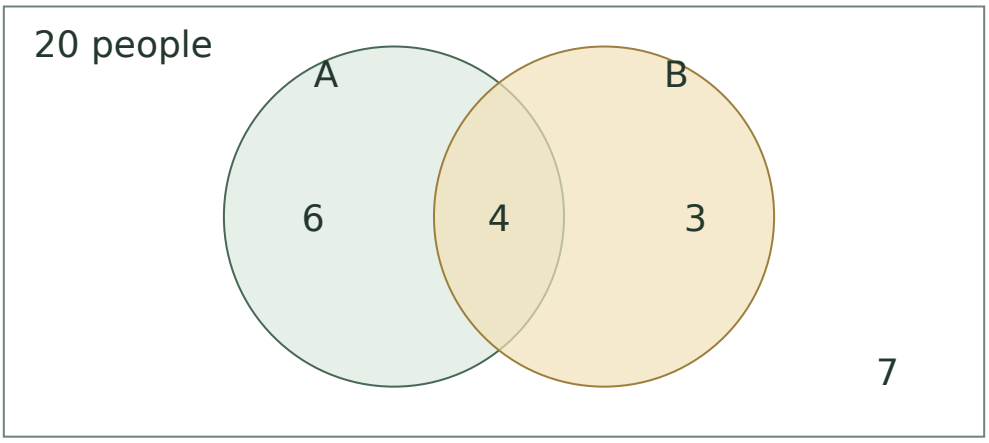
3. One person is chosen at random from the displayed group. Use the diagram to find P(A and B). [2 marks]



The overlap is 4 of 20.

Answer: 1/5

4. One person is chosen at random from the displayed group. Use the diagram to find P(A or B). [2 marks]



$6 + 4 + 3 = 13$ people are in at least one group.

Answer: 13/20

5. Of 30 students, 18 play football, 12 tennis and 5 both. How many play at least one? [2 marks]

$18 + 12 - 5 = 25$; subtract the double-counted overlap.

Answer: 25

6. Of 30 students, 18 play football, 12 play tennis and 5 play both. One student is chosen at random. Find P(neither sport). [2 marks]

$30 - 25 = 5$ play neither.

$5/30 = 1/6$.

Answer: 1/6