**IN CLASS**

Explore:

Ex. 1

A group of 30 students were asked about their favourite topping for toast.

18 liked peanut butter (*A*)  
10 liked jam (*B*)  
6 liked neither

(a) Show this information on a Venn diagram.

(b) Find the number of students who like both peanut butter and jam.

(c) Find the probability that a randomly chosen student from the group likes peanut butter, given that they like jam.

Explore:

Ex. 2

A survey was carried out in a group of 200 people. They were asked whether they smoke or not. The collected information was organized in the following table.

|  |  |  |
| --- | --- | --- |
|  | **Smoker** | **Non-smoker** |
| **Male** | 60 | 40 |
| **Female** | 30 | 70 |

One person from this group is chosen at random.

(a) Write down the probability that this person is a smoker.

(b) Write down the probability that this person is male given that they are a smoker.

(c) Find the probability that this person is a smoker or is male.

**Explore**

**Ex. 3**

In a group of 40 boys, 23 have dark hair, 18 have brown eyes, and 26 have dark hair, brown eyes, or both. One of the boys is selected at random. Determine the probability that he has:

a.) dark hair and brown eyes

b.) neither dark hair nor brown eyes

c.) dark hair but not brown eyes

d.) brown eyes given that he has dark hair

**Explore**

**Ex. 4**

The probability that Greta’s mother takes her shopping is 2/5. When Greta goes shopping with her mother she gets ice cream 70& of the time. When Greta does not go shopping with her mother she gets ice cream 30% of the time. Determine the probability that:

a.) Greta’s mother buys her an ice cream when shopping

b.) Greta went shopping with her mother, given that her mother has bought her an ice cream