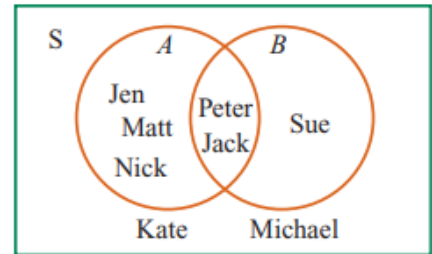# Venn Diagrams Practice

1. A person is chosen at random from a group of friends. A is the event 'has blond hair' and B is the event 'has blue eyes'. The outcomes for outcomes A and B are shown in the Venn diagram.
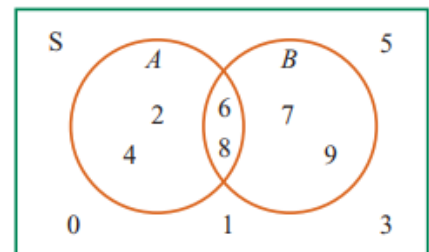
   a) List the sample space.

   List the set of outcomes for the following events:

   b) Has blond hair { }

   c) Does not have blond hair { }

   d) Has blue eyes { }

   e) Has blond hair and blue eyes { }

   f) Has blond hair but not blue eyes { }

   g) Has blue eyes but not blond hair { }

   h) Has neither blond hair nor blue eyes { }

2. Find the following outcomes for the Venn diagram drawn on the right:

   a) The sample space S = { , , , , , , , , , }
   (outcomes inside the rectangle)

   b) Event A = { , , , }

   c) Event 'not A' = { , , , , , }

   d) Event B = { , , , }

   e) Event 'not B' = { , , , , , }

   f) Event 'A and B' = { , }

   g) Event 'A or B' = { , , , , , }

   h) Event 'A or B but not both' = { , , , }

   i) Event 'neither A or B' = { , , , }

3. Data was collected from a group of people about whether they drink tea or coffee. The information is shown in the Venn diagram. Represent this information in the two-way table below.

|	Drink tea	Do not drink tea	Total
Drink coffee			
Do not drink coffee			
Total			

S
Tea 15 | 5 | Coffee 12
3
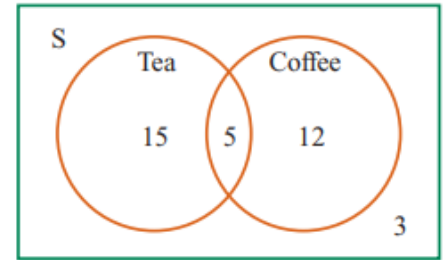
How many people:
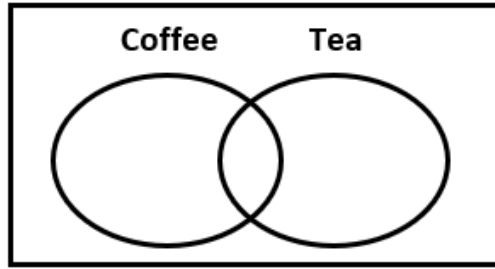
a) Drink tea

b) Do not drink tea

c) Drink tea but not coffee

d) Drink both tea and coffee

e) Drink neither tea nor coffee

f) Drink either tea or coffee but not both

4. In a group of 19 people waiting at a bus stop one morning, 13 people had an umbrella, 4 people had a raincoat, and 3 people had both an umbrella and a raincoat. Draw a Venn diagram to represent this information. How many people in this group:

a) Do not have an umbrella?

b) Do not have a raincoat?

c) Have an umbrella and a raincoat?

d) Have an umbrella or a raincoat?

e) Have a raincoat but not an umbrella?

f) Have an umbrella but not a raincoat?

g) Have neither an umbrella nor a raincoat?

5. In a class of 30 students 25 passed the math test, 24 passed the science test, and 23 passed both tests. Draw a Venn diagram to represent this information. How many students from this class:

a) Did not pass math?

b) Passed neither math or science?

c) Passed at least one subject?

d) Passed math but not science?

e) Passed science but not math?

A questionnaire asked people if they drink tea and coffee. A Venn diagrams are used to record the results. Shade in the correct part of each Venn diagram.
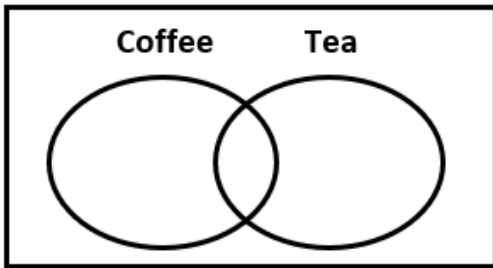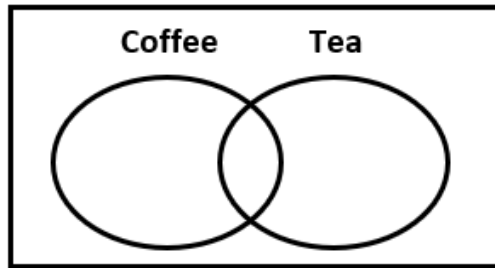
People who drink coffee.
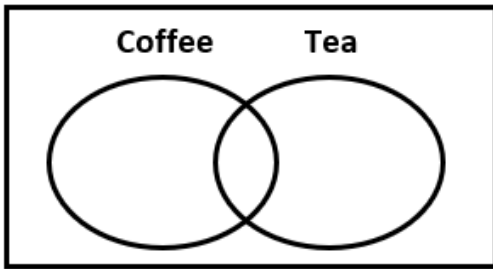
Coffee   Tea
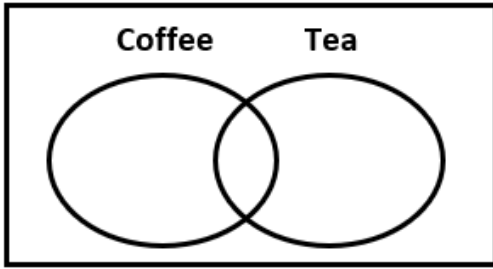
People who don't drink coffee.

Coffee   Tea

People who drink tea.

Coffee   Tea

People who don't drink tea.

Coffee   Tea

People who drink tea and coffee.

Coffee   Tea

People who drink tea or coffee.

Coffee   Tea
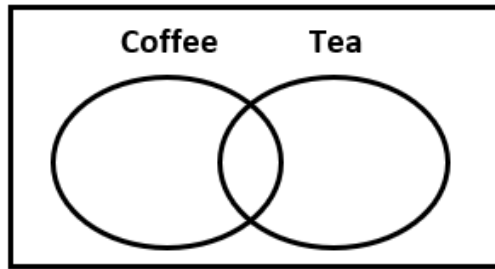
People who drink tea but not coffee.

Coffee   Tea
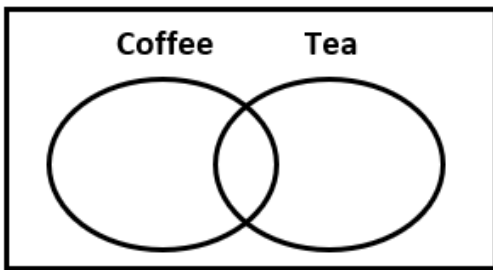
People who drink coffee but not tea.

Coffee   Tea
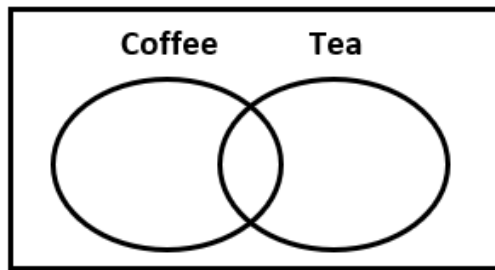
People who don't drink tea or coffee.

Coffee   Tea

People who drink tea or coffee but not both.

Coffee   Tea