

Here are 20 model questions similar to the provided example, focusing on set theory and Venn diagrams:

1. In a class of 150 students, 70 like soccer, 60 like basketball, and 30 like both. 10 students like neither.
 - a) Represent this information in a Venn diagram.
 - b) How many students like only soccer?
 - c) How many students like only basketball?

2. A survey of 120 people about their preferred beverages showed that the ratio of those who prefer coffee to tea is 3:5. 20 people like both, and 10 like neither.
 - a) Represent this information in a Venn diagram.
 - b) Find the number of people who like only coffee.
 - c) Find the number of people who like only tea.

3. Out of 100 animals at a zoo, 45 are mammals, 30 are reptiles, and 12 are both.
 - a) Draw a Venn diagram representing the situation.
 - b) How many animals are neither mammals nor reptiles?
 - c) What is the number of mammals that are not reptiles?

4. In a group of 80 people, 40 read newspaper A, 50 read newspaper B, and 15 read neither.
 - a) Draw a Venn diagram.
 - b) How many people read both newspapers?
 - c) How many read only newspaper A?

5. A survey of 180 people shows the following: 80 like apples, 70 like bananas, and 30 like both.
 - a) Represent the data using a Venn diagram.
 - b) How many people like only apples?
 - c) How many people do not like either apple or banana?

6. From a group of 250 workers, 120 like coffee, 80 like tea, and 50 like milk. 50 like both coffee and tea, 30 like both tea and milk, 40 like both coffee and milk, and 20 like all three.
 - a) Draw a Venn diagram.
 - b) How many like only coffee?
 - c) How many like only tea?

d) How many like only milk?

7. In a class of 130 students, 60 are in the math club, 50 are in the science club, and 30 are in the English club. 20 are in the math and science clubs, 15 are in the science and English clubs, and 10 are in the math and English clubs. 5 are in all three clubs.

a) Represent the data with a Venn diagram.

b) How many are in only the math club?

c) How many are in only the science club?

d) How many are in only the English club?

8. A survey of 160 families showed that 80 own dogs, 70 own cats, and 40 own both.

a) Represent the information in a Venn diagram.

b) How many families own a dog or a cat?

c) How many own neither a dog nor a cat?

9. Out of 220 students, 110 play cricket, 80 play football, and 40 play both.

a) Draw a Venn diagram to represent this data.

b) How many students play only cricket?

c) How many students play only football?

d) How many students play neither?

10. In a survey of 90 people, it was found that 60 liked pizza, 40 liked burger, and 20 liked both.

a) Illustrate this with a Venn diagram.

b) How many liked only pizza?

c) How many liked only burger?

d) How many liked neither?

11. A class has 30 students. 17 study French, 19 study Spanish, and 5 study neither.

a) Draw the corresponding Venn diagram.

b) How many students study both French and Spanish?

c) How many students study only French?

12. In a group of 110 people, 70 have a car, 50 have a motorcycle, and 20 have neither.

- a) Represent the information in a Venn diagram.
- b) How many people have both a car and a motorcycle?
- c) How many have only a car?

13. Out of 170 people, 100 like to read novels, 90 like to watch movies, and 40 like both.

- a) Present this data in a Venn diagram.
- b) How many people like to read novels but not watch movies?
- c) How many people do not like either novels or movies?

14. In a class of 140 students, 70 passed mathematics, 60 passed science, and 20 failed both.

- a) Draw a Venn diagram to show the number of students in each category.
- b) How many students passed in both subjects?
- c) How many students passed in mathematics only?

15. A survey of 190 people revealed that 110 like swimming, 80 like running, and 30 like neither.

- a) Show the results with a Venn diagram.
- b) Find the number of people who like both swimming and running.
- c) Find the number of people who like only swimming.

16. From a group of 200 students, 120 participate in sports, 80 participate in music, and 40 participate in both.

- a) Construct a Venn diagram representing this data.
- b) Determine the number of students who participate only in sports.
- c) Determine the number of students who participate only in music.
- d) How many students participate in neither sports nor music?

17. In a group of 180 tourists, 100 visited Paris, 70 visited Rome, and 30 visited both.

- a) Represent the data using a Venn diagram.
- b) Find the number of tourists who visited only Paris.
- c) How many tourists did not visit either city?

18. A class of 160 students øleted a test. 90 answered the first question correctly, 70 answered the second question correctly, and 30 answered neither correctly.

- a) Create a Venn Diagram illustrating the information.

- b) How many answered both questions correctly?
- c) How many answered only the first question correctly?

19. In a school of 210 students, 110 like football, 90 like basketball and 40 like neither.

- a) Draw a Venn diagram representing the given information.
- b) How many students like both football and basketball?
- c) How many students like only football?

20. In a survey of 130 households, 70 subscribe to newspaper A, 60 subscribe to newspaper B, and 20 subscribe to neither.

- a) Draw a Venn diagram.
- b) How many households subscribe to both newspapers?
- c) How many subscribe to only newspaper A?