Here are 20 model questions similar to the provided example, formatted as requested:

1. In a class of students, 60% like mathematics and 40% like science. 10% like neither. 12 students like both mathematics and science.
   a) Represent the data in a Venn diagram.
   b) How many students are there in the class?
   c) How many students like only mathematics?

2. A survey of 100 people revealed that 45 read newspaper A, 52 read newspaper B, and 15 read both newspapers.
   a) Draw a Venn diagram to illustrate the information.
   b) How many people read neither newspaper?
   c) How many people read only newspaper A?

3. In a group of 80 students, 30 play cricket, 40 play football, and 10 play both.
   a) Show this information using a Venn diagram.
   b) Find the number of students who play neither cricket nor football.
   c) Find the number of students who play only football.

4. Out of 200 employees, 140 drink tea and 120 drink coffee. 20 drink neither tea nor coffee.
   a) Represent this using a Venn diagram.
   b) How many employees drink both tea and coffee?
   c) How many employees drink only tea?

5. Let U be a universal set with n(U) = 150. Let A and B be subsets of U such that n(A) = 80, n(B) = 60, and n(A ") B) = 20.
   a) Draw a Venn diagram representing this information.
   b) Find n(A "* B).
   c) Find n(A œ).

6. If P(A) = 0.6, P(B) = 0.5, and P(A "* B) = 0.8, then:
   a) Find P(A ") B). Illustrate with Venn diagram.
   b) Find P(A œ ") B œ).
   c) Find P(A | B) (Probability of A given B).

7. A survey showed that 70% of consumers prefer product X, and 60% prefer

product Y. Some prefer both. It was found that 30 consumers prefer both X and Y.

a) Show the data in a Venn diagram.

b) If 10% prefer neither, how many total consumers were surveyed?

c) How many consumers prefer only product X?

8. Let A = {x: x is a prime number less than 10} and B
9}.

a) List the elements of sets A and B. Represent with Venn diagram.

b) Find A "* B.

c) Find A ") B.

9. In a survey of 500 people, 285 watched movie A and 195 watched movie B. 50 watched neither.

a) Display the data using a Venn diagram.

b) How many people watched both movies?

c) How many people watched only movie A?

10. Given: n(U) = 250, n(A) = 100, n(B) = 70, n(A "* B)

a) Represent the information on a Venn diagram.

b) Find n(A ") B).

c) Find n(B œ).

11. A group of students were asked about their favorite subjects. 45% like math, 55% like English, and 20% like both. 10 students liked neither.

a) Show this information in a Venn diagram.

b) How many students were in the group?

c) How many students liked only English?

12. Out of 150 people surveyed, 80 own a car, 60 own a motorcycle, and 30 own both.

a) Represent this information using a Venn diagram.

b) How many people own neither a car nor a motorcycle?

c) How many people own only a car?

13. Let A and B be two sets such that n(A) = 15, n(B) =

a) Draw a Venn diagram representing A and B.

b) Find n(A ") B).

c) Find n(A - B) [elements in A but not in B].

14. 80 students took an exam. 50 passed math, 40 passed physics, and 10 failed both.

a) Show this information in a Venn diagram.

b) How many students passed both subjects?

c) How many students passed only math?

15. If P(A) = 1/3, P(B) = 1/4, and P(A ") B) = 1/5.

a) Draw a Venn diagram showing P(A), P(B) and P(A

b) Find P(A "* B).

c) Find P(A œ).

16. In a school, 65% of the students play football, 50% play basketball, and 20% play neither. If there are 300 students in the school:

a) Represent the data in a Venn diagram.

b) How many students play both football and basketball?

c) How many students play only football?

17. A survey about favorite fruits showed that 60 people liked apples, 50 liked bananas, and 20 liked both.

a) Represent this in a Venn diagram.

b) If every person liked at least one of the fruits, how many people were surveyed?

c) How many liked only bananas?

18. Given the universal set U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}, A = {2, 4, 6, 8, 10}, and B = {1, 3, 5, 7, 9}.

a) Show this in a Venn diagram.

b) Find A ") B.

c) Find A œ "* B œ.

19. In a class of 60 students, 25 like tea, 30 like coffee and 8 like both tea and coffee.

a) Illustrate with Venn diagram

b) How many students like neither tea nor coffee?

c) How many students like only coffee?

20. Out of 300 students who took an examination, 60% passed in mathematics,

50% passed in physics and 30% failed in both subjects.

a) Represent the information in a Venn diagram.

b) How many students passed in both subjects?

c) How many students passed in mathematics only?