

## T101 USING VENN DIAGRAMS TO SOLVE PROBLEMS

Use a Venn Diagram to answer each of the following questions. You must show a complete Venn Diagram for each.

1. The following list shows the preferences of 102 people at a wine tasting party:

99 like Merlot	94 like Cabernet & Zinfandel	96 like Cabernet
99 like Zinfandel	95 like Merlot & Cabernet	96 like Merlot & Zinfandel
93 like all three		

- How many people prefer none of the three?
- How many people prefer Merlot, but not Cabernet?
- How many people prefer anything but Zinfandel?
- How many people prefer exactly two kinds of wine?

2. A chicken farmer surveyed his flock with the following results. The farmer counted:

9 fat red roosters (male chickens)	37 fat chickens	6 thin red roosters
2 fat red hens (female chickens)	7 thin brown hens	5 thin red hens
26 fat roosters	18 thin brown roosters	

HINT: Make 3 circles: Fat, Male & Red

- How many chickens are fat?
- How many chickens are red?
- How many chickens are male?
- How many chickens are fat, but not male?
- How many chickens are brown, but not fat?
- How many chickens are red and fat?

3. Country Western songs emphasize three basic themes: love, prison, and trucks. A survey of the local Country Western radio station produced the following data:

12 songs about a truck driver who is in love while in prison

2 songs about people in prison who are not in love and do not drive trucks

8 songs about people who are out of prison, are not in love, and do not drive trucks

13 songs about a prisoner in love

28 songs about a person in love

18 songs about a truck driver in love

16 songs about truck drivers who are not in prison

3 songs about truck drivers in prison who are not in love

- a. How many songs are about truck drivers?
- b. How many songs were surveyed?
- c. How many songs are about prisoners?
- d. How many songs are about truck drivers in prison?
- e. How many songs are about people not in prison?
- f. How many songs are about people not in love?

## ANSWERS

1. a. 0
- b. 4
- c. 3
- d. 6

2. a. 37
- b. 22
- c. 50
- d. 11
- e. 25
- f. 11

3. a. 31
- b. 51
- c. 18
- d. 15
- e. 33
- f. 23