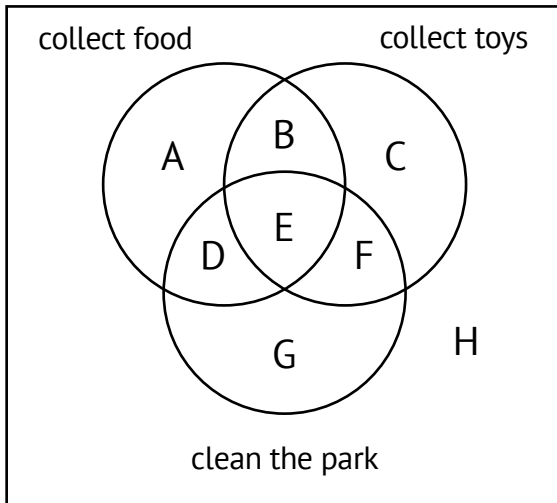# Volunteers

Several middle school students are volunteering in their community. Students were asked if they had helped collect food for the hungry, helped collect toys for children in the hospital, or cleaned the park.

Use the clues to determine how many people were surveyed.

1. Forty-one people helped clean the park.

2. Fifty-one people helped collect food.

3. Forty-four people helped collect toys.

4. The only student surveyed who had done all three activities received recognition from the school.

5. Seventeen people collected food and toys but did not clean the park.

6. Twelve people helped collect toys and cleaned the park but did not collect food.

7. Forty-three people participated in more than one activity.

8. Seven people surveyed had not volunteered.

How many students were surveyed? _____

Volunteers

collect food   collect toys

A   **B**   C

E

D   **F**

G   H

clean the park

clue 1: D+E+F+G=41
clue 2: A+B+D+E=51
clue 3: B+C+E+F=44
clue 4: E=1
clue 5: B=17
clue 6: F=12
            (clue 3) 17+C+1+12=44, so C=14
clue 7: B+D+E+F=43
            17+D+1+12=43, so D=13
            (clue 1) 13+1+12+G=41, so G=15
            (clue 2) A+17+13+1=51, so A=20
clue 8: H=7

A = 20	E = 1
B = 17	F = 12
C = 14	G = 15
D = 13	H = 7

A+B+C+D+E+F+G+H=99
Ninety-nine students were surveyed.