MAXIMA/MINIMA

1. In a survey it was found that 80% like Friends whereas 70% like HIMYM. If all the people surveyed like at least one of the two shows, how many people like both the shows?

2. In a survey it was found that 80% like Friends whereas 70% like HIMYM. What is the maximum and minimum number of those who like both?

3. 80% of the CAT aspirants spend time-solving Quant whereas 60% spend time-solving Verbal. If only those aspirants who spend time solving both the sections crack CAT, what is the maximum and the minimum percentage of the aspirants who will not crack CAT?

Direction: In a school, there are 200 students. 100 play cricket, 50 play hockey and 60 play basketball. 30 students play both cricket and hockey, 35 play both hockey and basketball, and 45 play both basketball and cricket.

4. What is the maximum possible number of students who play at least one game?

5. What is the maximum possible number of students who play all the 3 games?

6. What is the minimum possible number of students playing at least one game?

7. what is the minimum possible number of students playing all the 3 games?

Direction: For a CAT Mock Test, there are 500 students. Out of these, 240 like DI, 160 like VA and 180 like QA. 100 students like both DI & VA, 120 students like VA & QA and 130 students like both QA & DI.

8. What is the maximum no. of students who like all the three subjects?
   (a) 80   (b) 100
   (c) 130   (d) 120

9. What is the minimum no. of students who like all the three subjects?
   (a) 80   (b) 70
   (c) 0   (d) 40

10. What is the maximum no. of students who like only DI?
    (a) 80   (b) 110
    (c) 75   (d) 40

11. What is the minimum no. of students who like only VA?
    (a) 60   (b) 10
    (c) 0   (d) 40

12. What is the maximum no. of students who like exactly two subjects?
    (a) 180   (b) 120

    (c) 130   (d)140

13. In a survey it was found that 40% like tea, 50% like coffee and 60% like milk. Every person likes at least one of the three items tea/coffee/milk. What are the maximum and minimum possible values of those who like all three?

14. There are 3 electives offered to the students class of 92 (the students have a choice of not choosing any electives). 60 students opted for marketing, 80 for finance and 50 for systems, 40 students opted for both marketing and systems, 50 for both marketing and finance and 45 for both finance and systems. What is the maximum and the minimum possible number of students who opted for all 3 electives?

15. According to a survey, at least 70% of people like apples, at least 75% like bananas and at least 80% like cherries. What is the minimum percentage of people who like all three?

16. A survey was conducted among a group of 50,000 people about preferred newspapers. The following were the results: 90% liked Times of India, 85% liked Economic Times, 80% Hindustan Times, 82% liked Mumbai Mirror, 75% liked Daily News and Analysis, and 4000 did not like any of these newspapers. Find the minimum number of people who liked all the five newspapers.

17. There are 3 electives offered to the students in class of 92 (the students have a choice of not choosing any electives). 60 students opted for marketing, 80 for finance and 50 for systems, 40 students opted for both marketing and systems, 50 for both marketing and finance and 45 for both finance and systems.
    What are the maximum and the minimum possible number of students who opted for all 3 electives?

18. In an office, where working in at least one department is mandatory, 78% of the employees are in operations, 69% are in finance and 87% are in hr. what are the maximum and minimum percentages of employees that could have been working in all three departments?

Directions: Each person, out of the 200 people in a certain community, speaks at least one language among English, Spanish and French. 37% of the people speak at least two of the three languages, while 15% of the people speak only Spanish. It was also known that 23% of the people speak English and French, while 20% speak English and Spanish and 12% speak all the three languages.

19. If the number of people who speak English is less than that of those who speak French, at least what percentage of the people do not speak English?
    a) 45.5%   b) 41.5%
    c) 39.5%   d) 37.5%

20. If the number of people who speak Spanish is less than that of those who speak English, than at most what percentage of the people speak French but not Spanish?
a) 46.5%
b) 48.5%
c) 53.5%
d) None of these

21. If the total number of people who speak English is twice that of those who speak French, what percentage of the people speak English or Spanish?
a) 82%
b) 84%
c) 87%
d) 93%

Directions: 200 person CAT crackers called for the GD & PI process in IIM Ahmedabad. During the interview process 105 offered tea, 56 offered coffee and 50 participants offered cold drink. There are 32 participants who offered tea and cold drink and 45 participants offered tea and coffee. Also, there are 30 participants who offered coffee and cold drink.

22. Find the minimum number of participants who offered all three drinks.
a) 12
b) 19
c) 30
d) 32

23. Find the maximum number of participants who offered no drink.
a) 69
b) 70
c) 66
d) 77

24. Find the maximum number of participants who offered at least two drinks?
a) 79
b) 69
c) 59
d) 47

Direction: The following table gives the number of students who secured more than 90% marks in each of the five subjects from class 6th to 10th at a school in the year 2006.

Class/Subject	English	Physics	Chemistry	Maths	Biology
6th	12	16	15	22	18
7th	15	22	22	21	15
8th	7	18	16	23	17
9th	10	19	15	22	18
10th	15	25	21	29	16

The number of students in the different classes in the year were as below

Class	No. of students
6th	30
7th	35
8th	28
9th	36
10th	40

25. In the class 7th the number of students who scored more than 90% in at least two of the five subjects is at least
a) 12
b) 15
c) 18
d) 20
e) none of these

26. The number of students in class 10th who scored more than 90% in exactly three subjects is at most
a) 32
b) 34
c) 35
d) 38
e) none of these

27. The no. of students who scored more than 90% in exactly four subjects in all the four classes together is at most
a) 28
b) 61
c) 96
d) 101
e) none of these

28. The number of students in class 6th who scored more than 90% in at most two subjects is at most-
a) 19
b) 21
c) 22
d) 26
e) 30