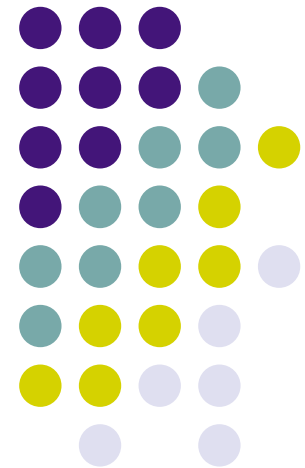
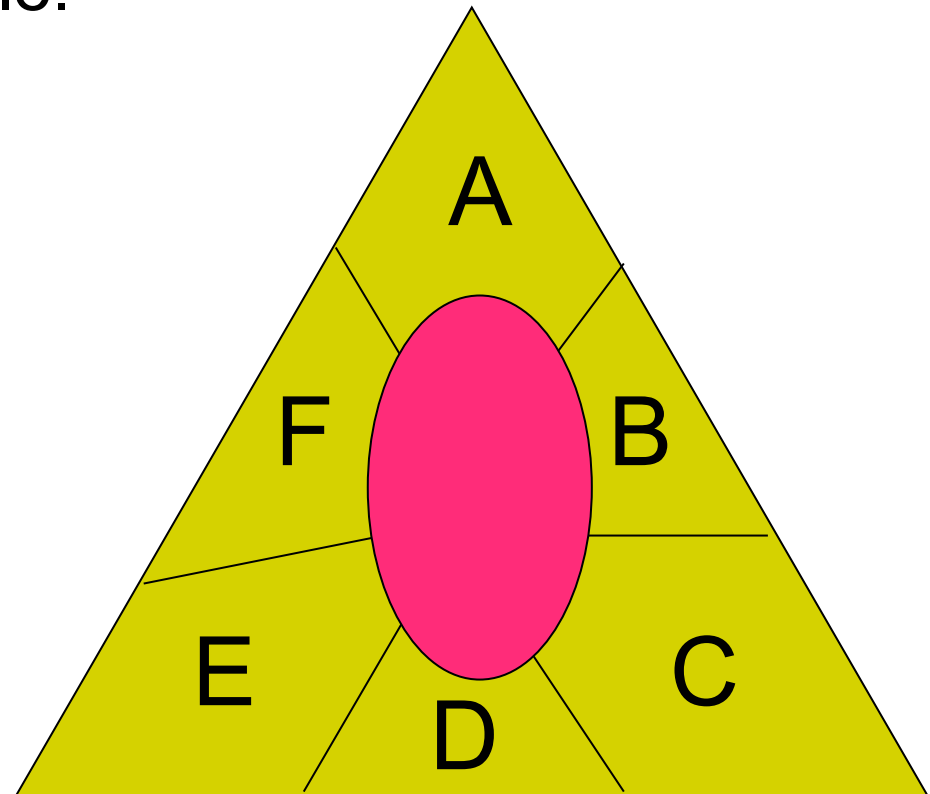


Triangular Restaurant

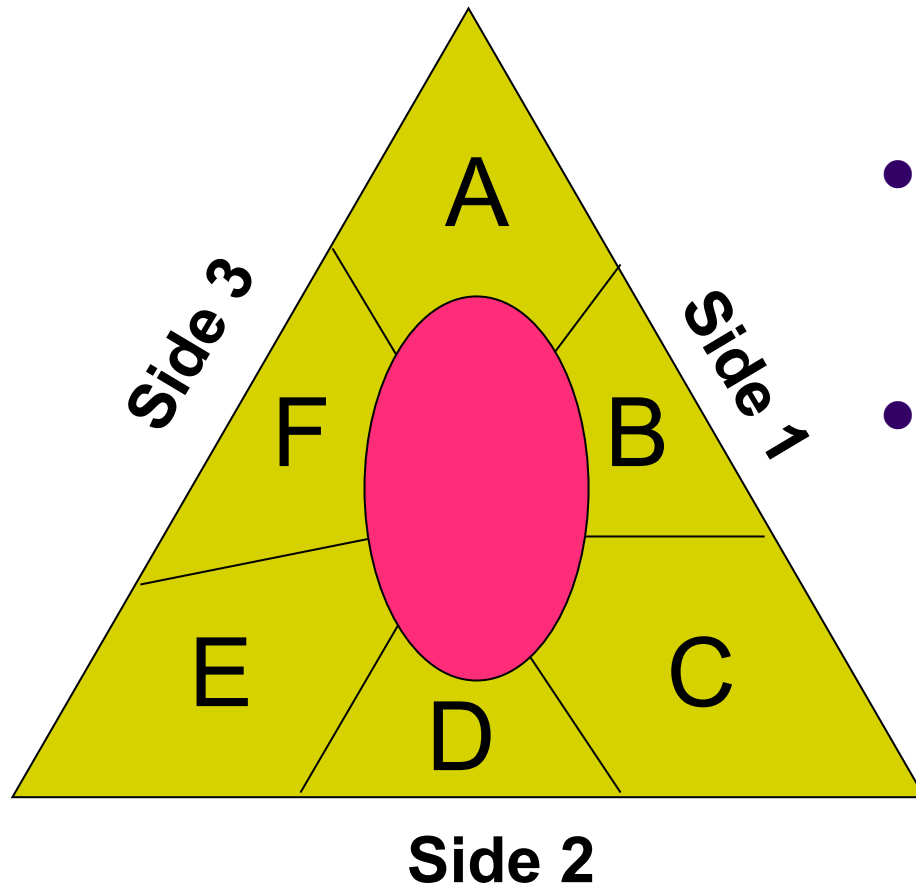


Scenario

- You are the head waiter for the triangular restaurant.
- The unique feature of this restaurant is that it is triangular in shape with the kitchen located at the centre of the triangle.
- The restaurant is divided into 6 separate sections.
- The sections are named A to F.

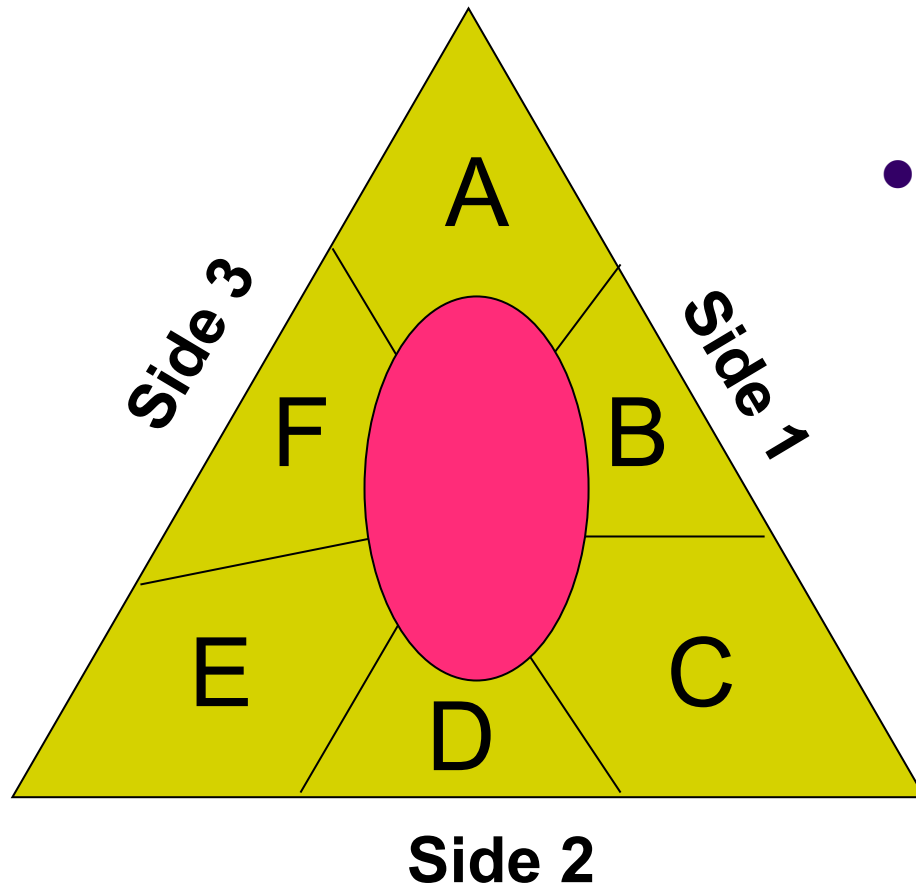


Scenario



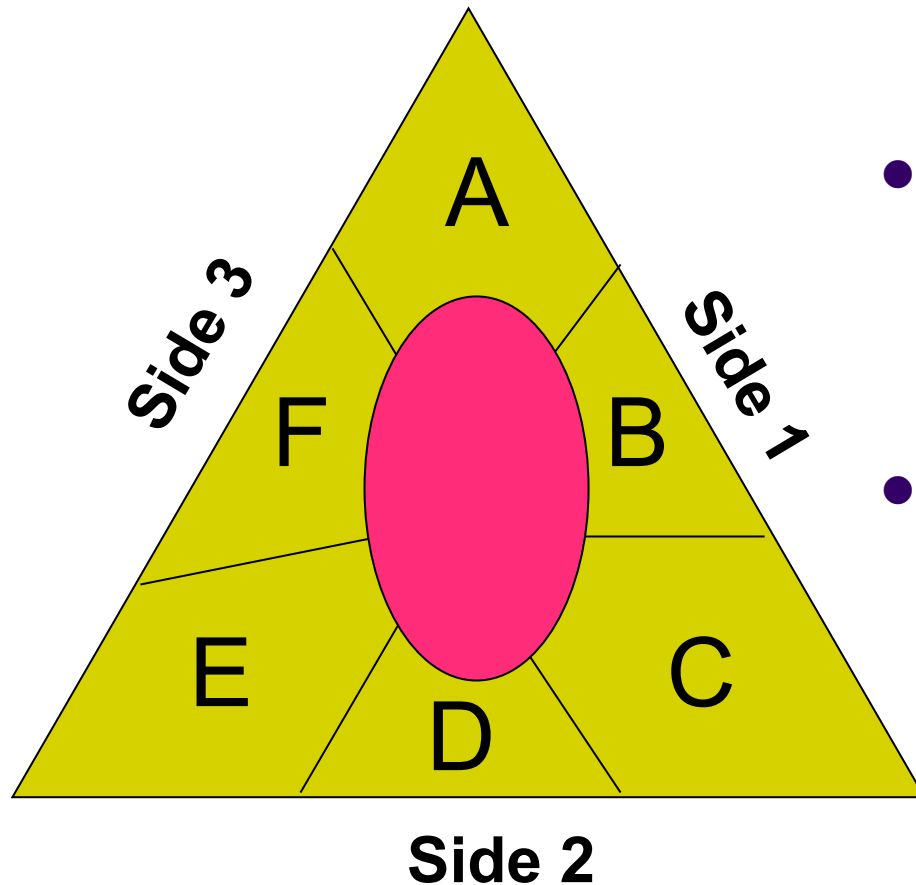
- 3 sections can be seen from each side of the triangle
- This means that:
 - On Side 1, you can see Sections A, B and C
 - On Side 2, you can see Sections C, D and E
 - On Side 3, you can see Sections E, F and A

Scenario



- Your boss wants to run the restaurant using the most efficient staffing of waiters when possible.

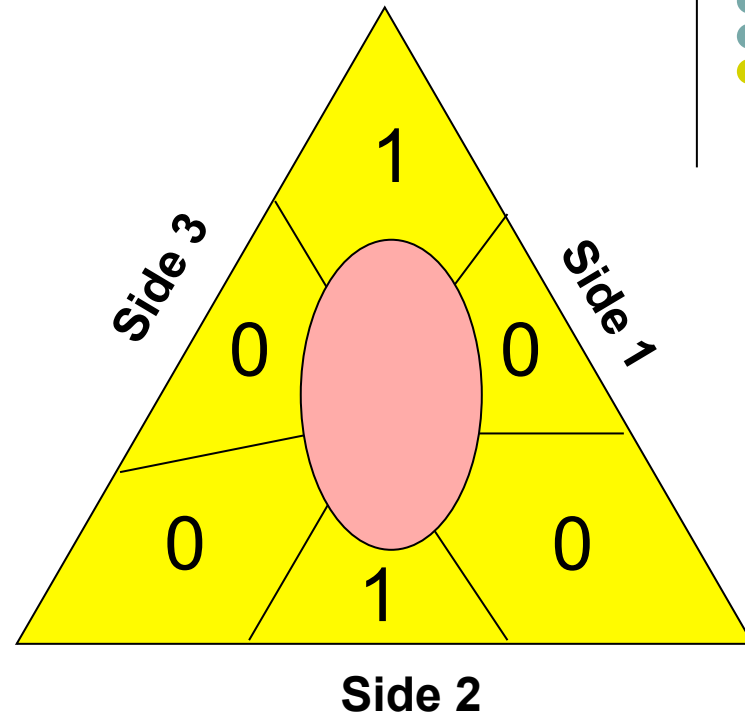
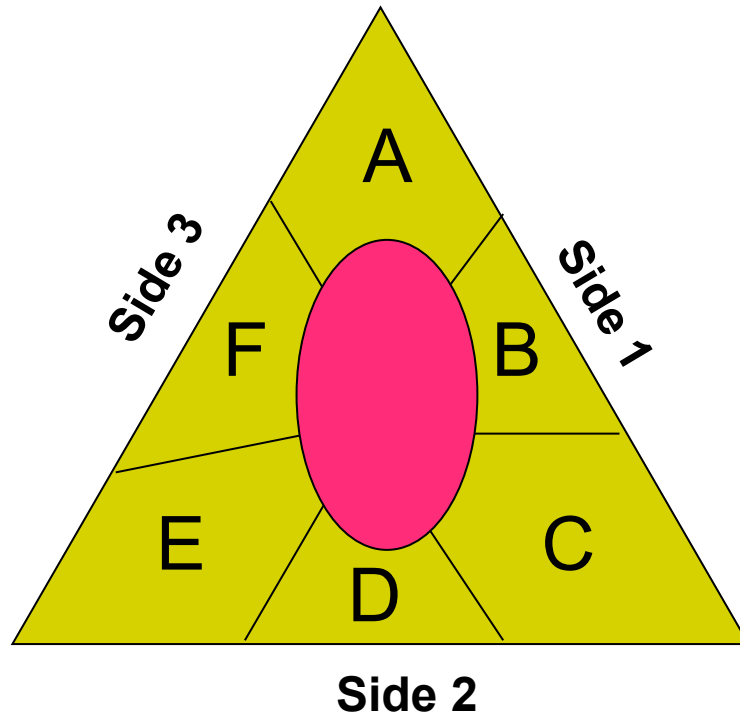
Problem 1



- On Monday mornings, he has noticed that there were very few patrons during this period of time.
- Your boss tasks you to deploy just enough waiters such that only 1 waiter can be seen from each side of the triangle.

- Instruction to the head waiter:
Move enough waiters into the sections such that your boss' instruction is carried out.

Problem 1 (Solution)

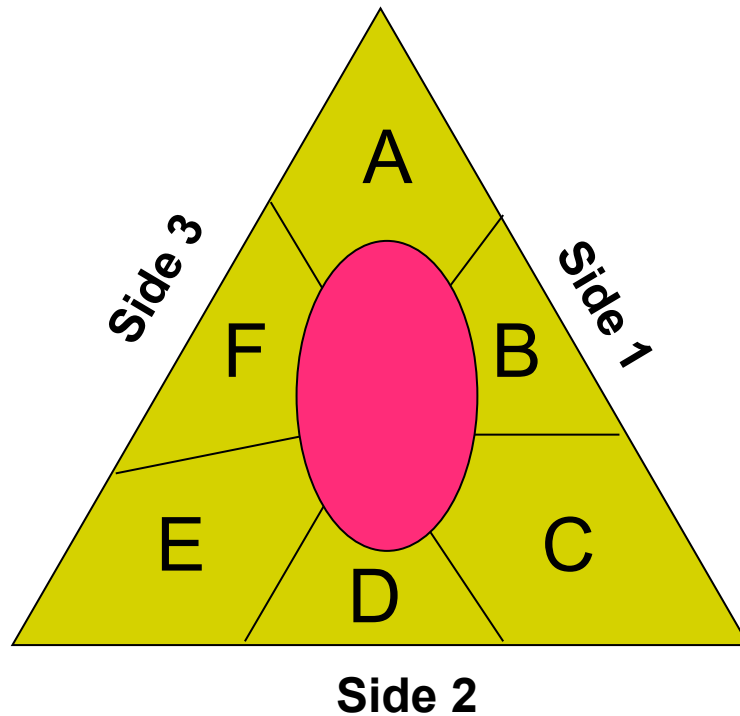
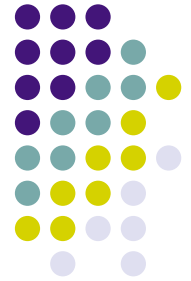


Actual no. of waiters $\rightarrow 2$

Perceived no. of waiters $\rightarrow 3$

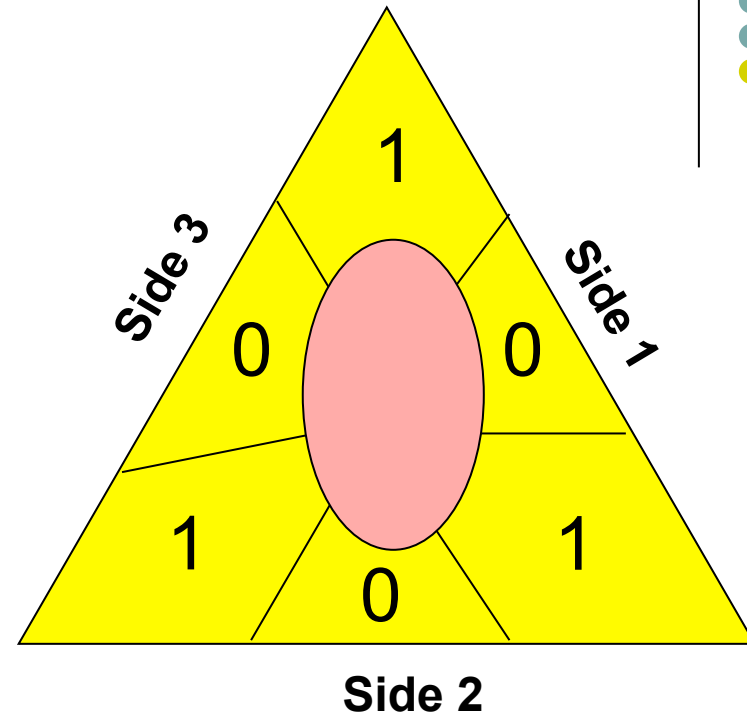
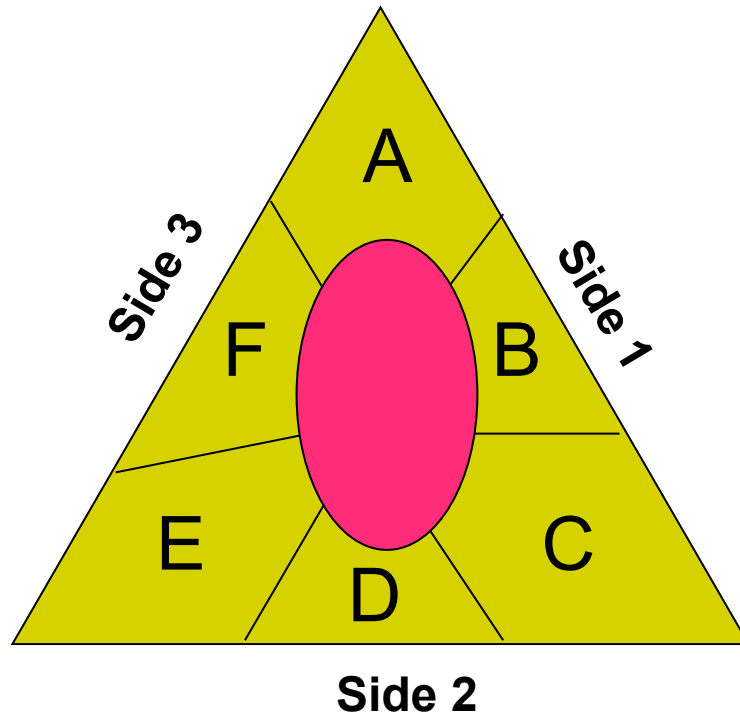
- Instruction to the head waiter:
Deploy just enough waiters such that only 1 waiter can be seen from each side of the triangle.

Problem 2



- As the number of patrons slowly increases, your boss decides to deploy more waiters.
- Instruction to the head waiter:
Deploy just enough waiters such that only 2 waiters can be seen from each side of the triangle.

Problem 2 (Solution)

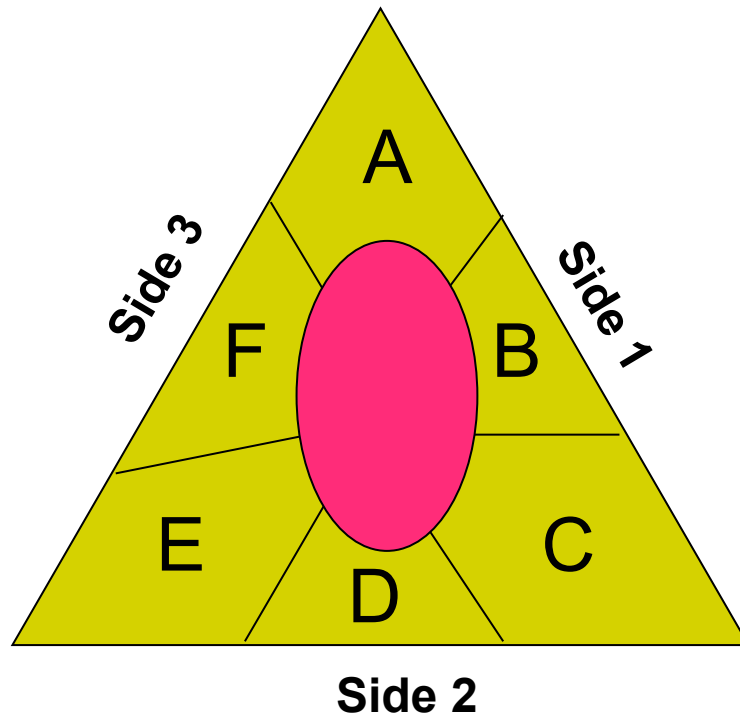


Actual no. of waiters $\rightarrow 3$

Perceived no. of waiters $\rightarrow 6$

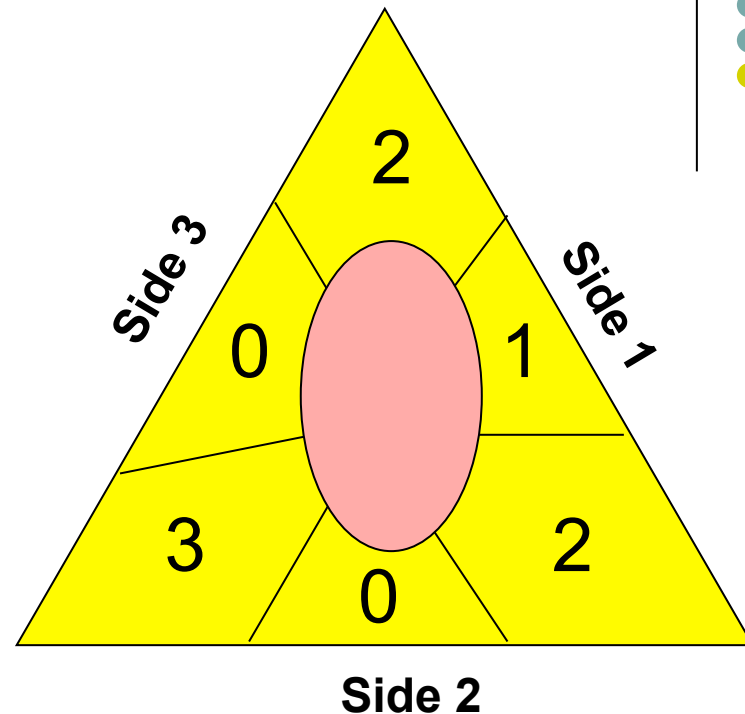
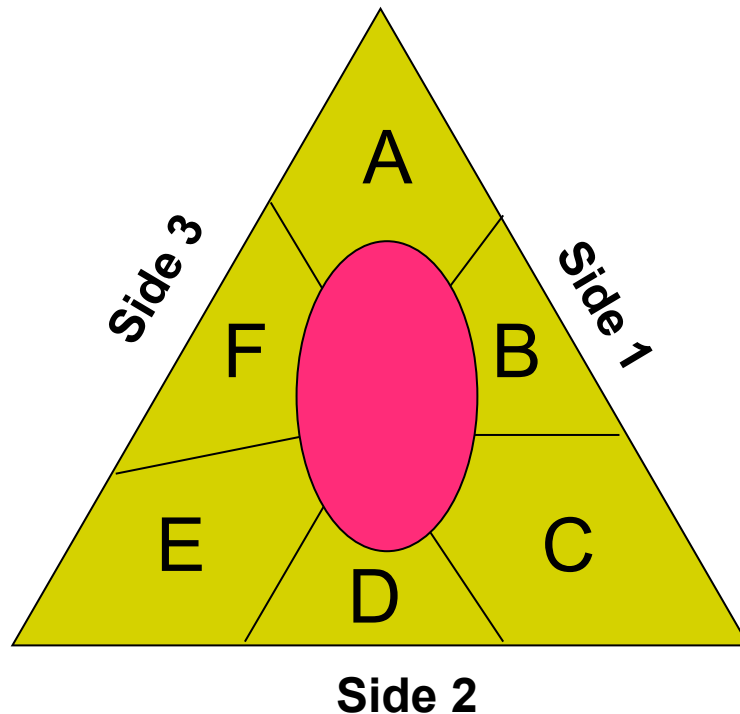
- Instruction to the head waiter:
Deploy just enough waiters such that only 2 waiters can be seen from each side of the triangle.

Problem 3



- During lunchtime on Monday afternoons, the number of patrons has greatly increased. Your boss decides to deploy even more waiters.
- Instruction to the head waiter:
Deploy just enough waiters such that only 5 waiters can be seen from each side of the triangle.

Problem 3 (Solution)

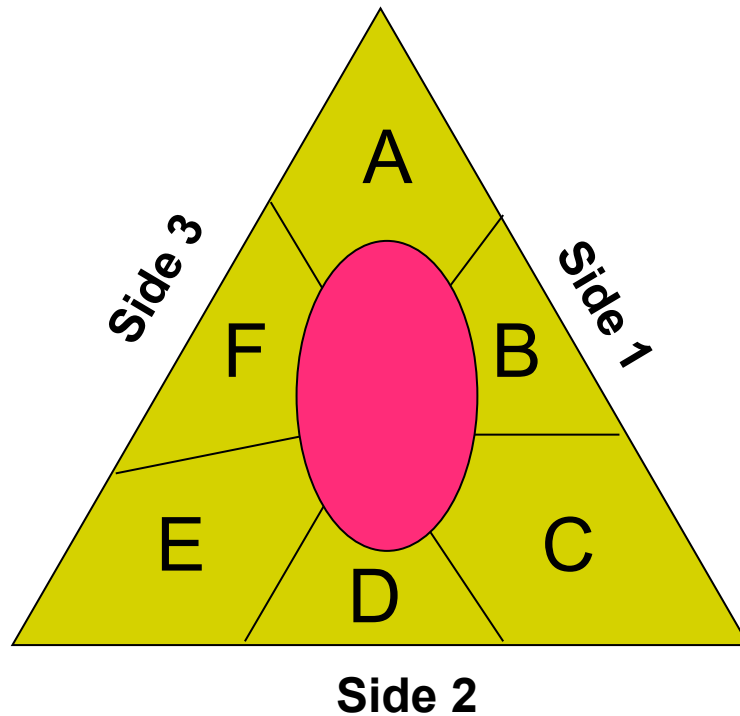


Actual no. of waiters $\rightarrow 8$

Perceived no. of waiters $\rightarrow 15$

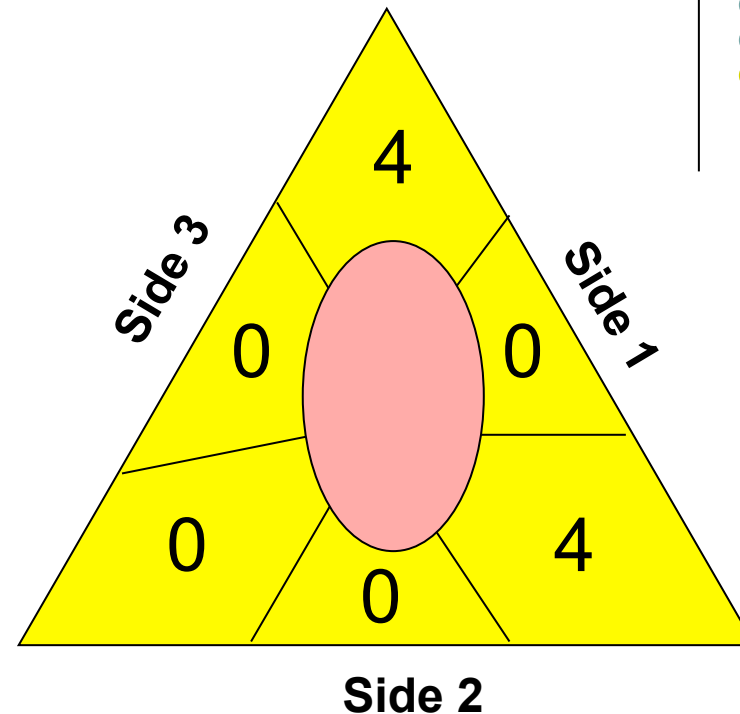
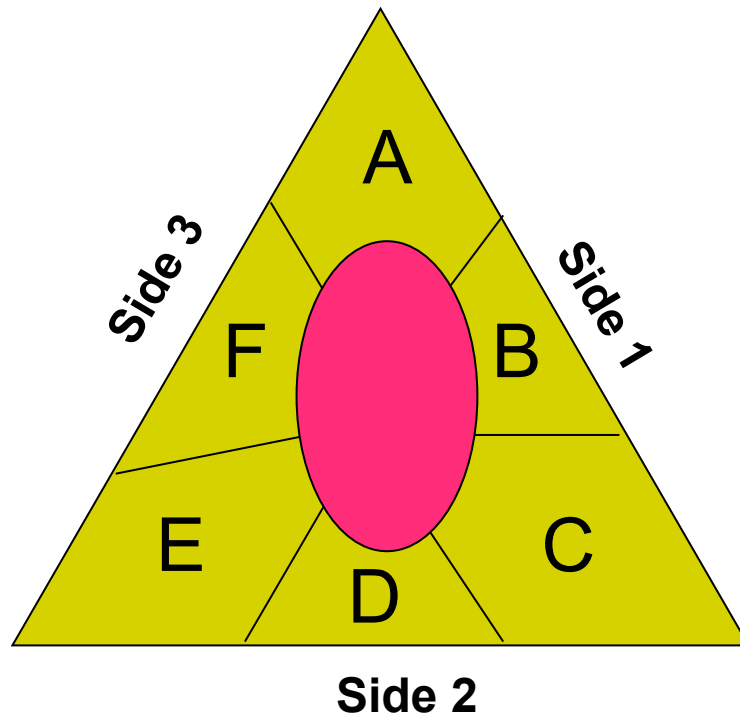
- Instruction to the head waiter:
Deploy just enough waiters such that only 5 waiters can be seen from each side of the triangle.

Problem 4



- During tea time on Monday afternoons, Side 1 is used to host the high tea buffet while Sides 2 and 3 are used for ala carte dine ins.
- Instruction to the head waiter:
Deploy just enough waiters such that only 8 waiters can be seen from Side 1, 4 waiters can be seen from Sides 2 and 3.

Problem 4 (Solution)

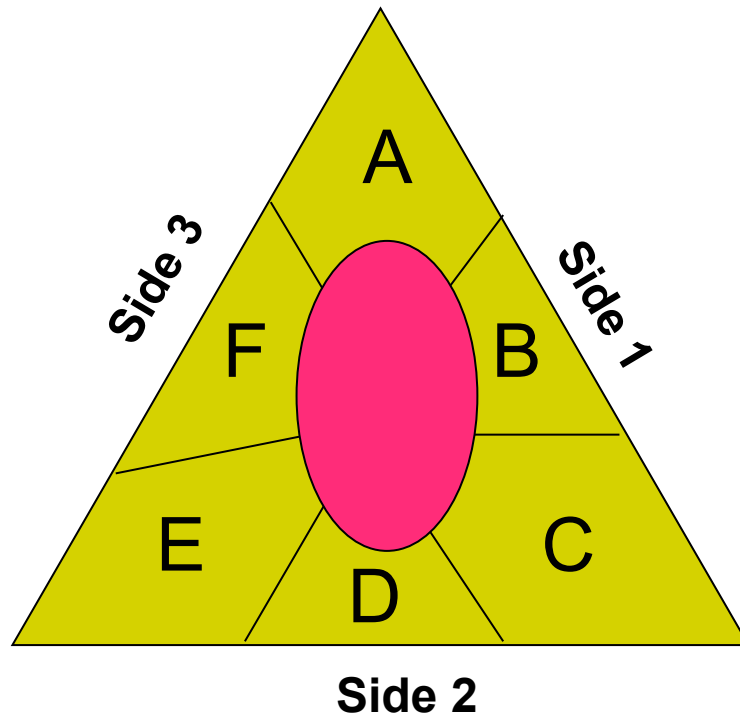


Actual no. of waiters $\rightarrow 8$

Perceived no. of waiters $\rightarrow 16$

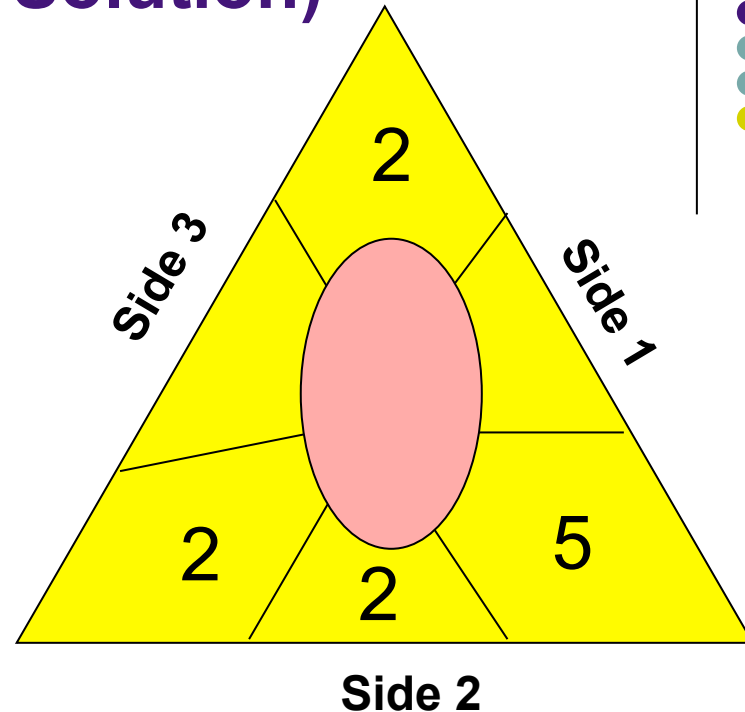
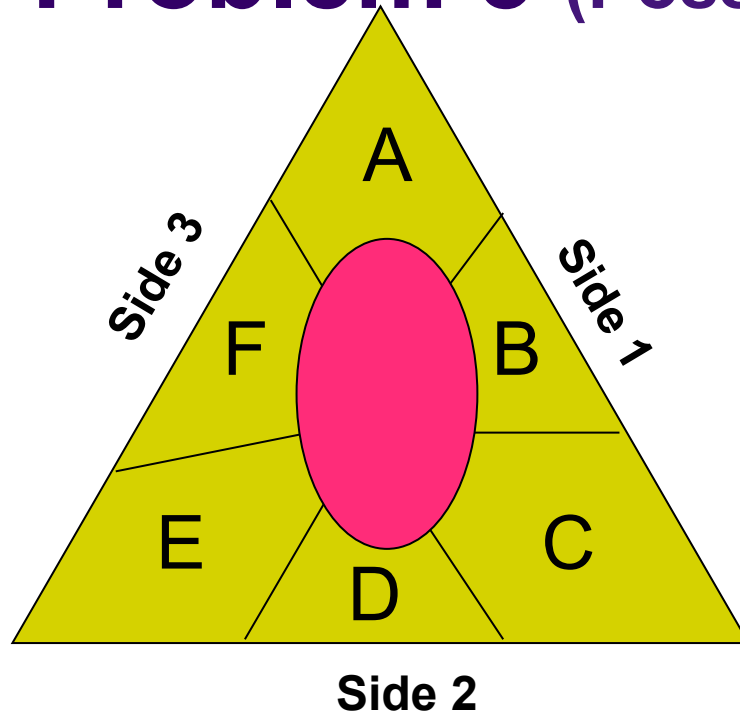
- Instruction to the head waiter:
Deploy just enough waiters such that only 8 waiters can be seen from Side 1, 4 waiters can be seen from Sides 2 and 3.

Problem 5



- On Monday evenings, Side 1 is used to host a dinner buffet while Side 2 is used for ala carte dine ins. Side 3 is reserved for special functions.
- Instruction to the head waiter:
Deploy all the 11 waiters that you have such that 7 waiters can be seen from Side 1, there are 5 more waiters seen from Side 2 than Side 3.

Problem 5 (Possible Solution)

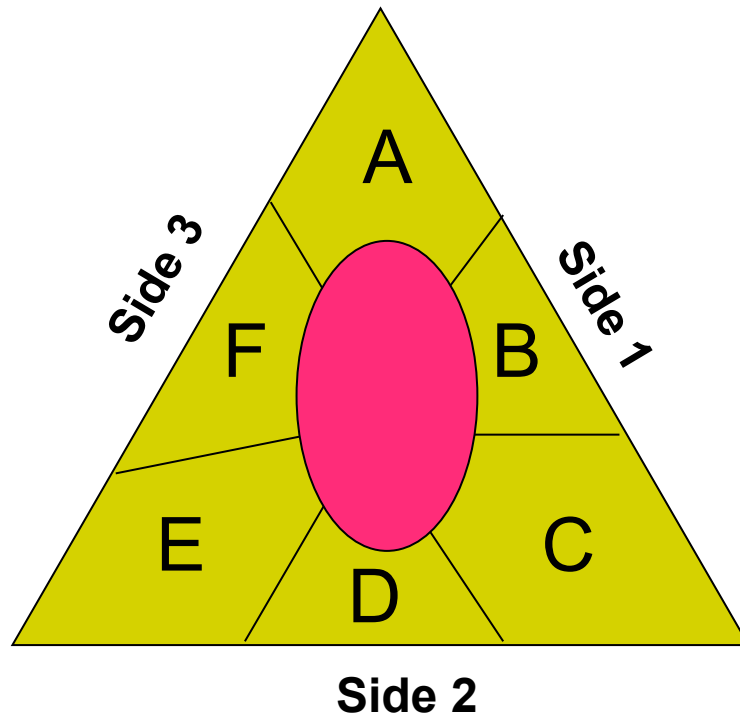


Actual no. of waiters $\rightarrow$ 11

Perceived no. of waiters $\rightarrow$ 20

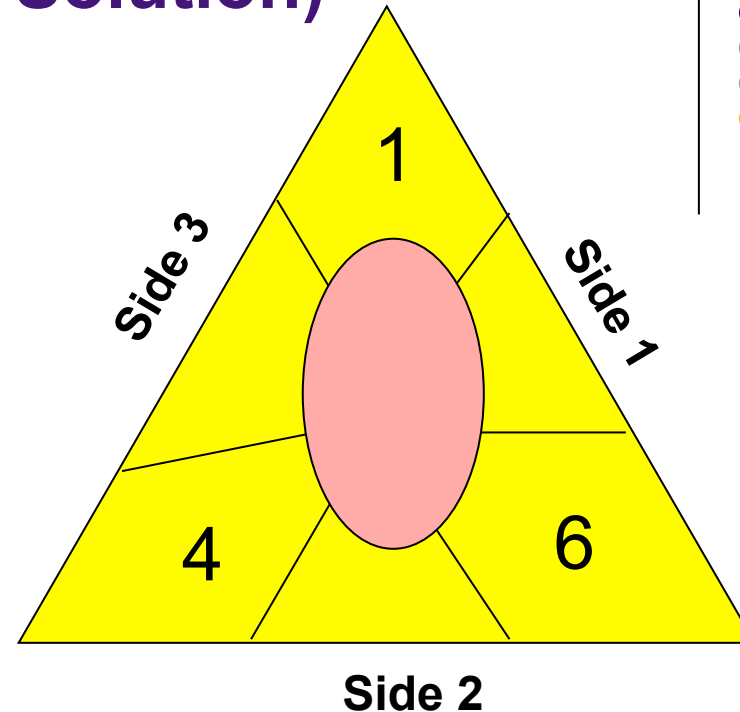
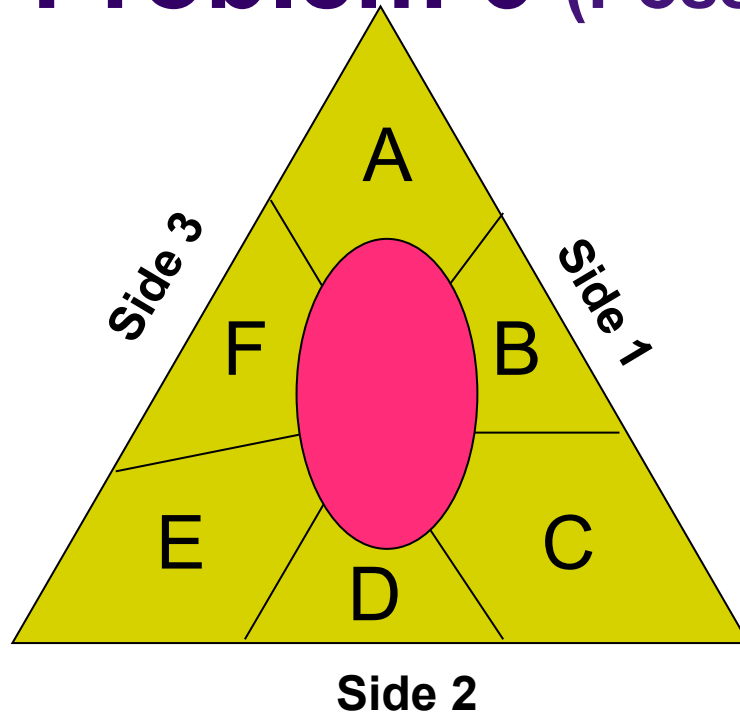
- Instruction to the head waiter:
Deploy all the 11 waiters that you have such that 7 waiters can be seen from Side 1, there are 5 more waiters seen from Side 2 than Side 3 and there is a maximum perceived no. of waiters.

Problem 6 – Challenging Qn



- Instruction to the head waiter:
Deploy all the 11 waiters that you have such that 7 waiters can be seen from Side 1, there are 5 more waiters seen from Side 2 than Side 3 and there is a maximum perceived no. of waiters.

Problem 6 (Possible Solution)



Actual no. of waiters $\rightarrow$ 11

Perceived no. of waiters $\rightarrow$ 22

- Instruction to the head waiter:
Deploy all the 11 waiters that you have such that 7 waiters can be seen from Side 1, there are 5 more waiters seen from Side 2 than Side 3 and there is a maximum perceived no. of waiters.

Can you create a similar problem
for your friend to solve?

Use different shapes with
different conditions/restrictions.

