Interpretation of Statistics

How to deal with the information provided?

Information can be provided to you in different forms.
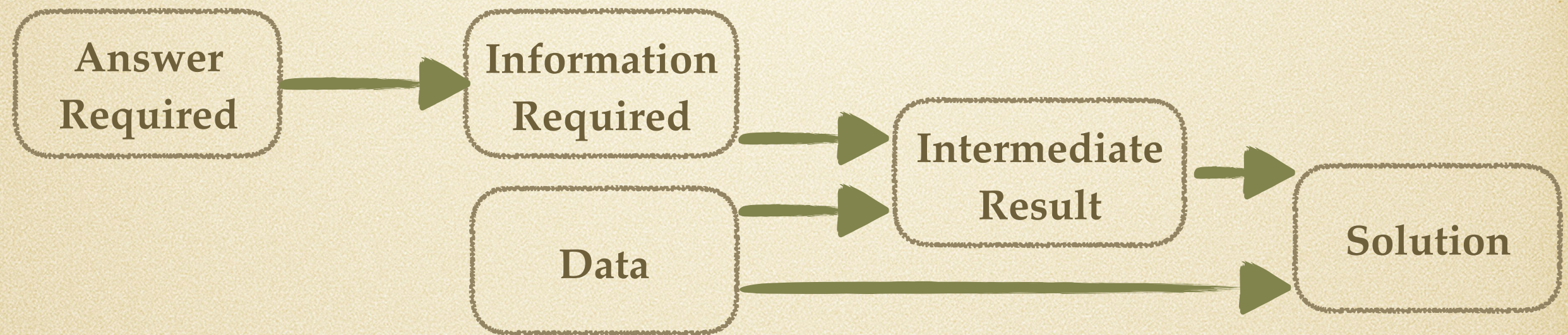
Can you name some?

Information can be given to you as:

- Words (numerical, spatial, logical)

- Tables

- Pictorial (pictures that not only show what something looks like, but also give information about relative sizes and positions)

- Diagrams (flow charts, maps, schedules)

- Graphs

How to organise the information to solve the problem?

Let's try and solve some problems using the information provided!

Working with Words!

A drawer contains eight blue socks and eight black socks. It is dark and you cannot tell the difference between the two colours.

What is the smallest number you will have to take out to ensure that you have a matching pair?

A drawer contains eight blue socks and eight black socks. It is dark and you cannot tell the difference between the two colours.

What is the largest number you can take out and still not have a matching pair?

A drawer contains eight blue socks and eight black socks. It is dark and you cannot tell the difference between the two colours.

What is the smallest number you can take out to be sure that you have one of each colour?

A drawer contains eight blue socks and eight black socks. It is dark and you cannot tell the difference between the two colours.

What is the largest number you can take out and still have all of one colour?

A drawer contains eight blue socks and eight black socks. It is dark and you cannot tell the difference between the two colours.

What is the smallest number you can take out to be sure you have a blue pair?

PROBLEM:

Mehwish has been staying in a hotel on a business trip. When she checks out, the hotel's computer isn't working, so the receptionist makes a bill by hand from the receipts, totalling $471. Mehwish thinks she has been overcharged, so she checks the itemised bill carefully.

Room: 4 nights at $76.00 per night

Breakfast: 4 at $10.00 each

Dinners: 3 at $18.00 each

Telephone: 10 units at $1.70 per unit

Cold Drinks ordered in Room: various drinks totalling $23.00

Laundry: 3 blouses at $5.00 each

It appears that the receptionist miscounted one of the items when adding up the total.

Which item has Mehwish been charged too much for?

Overturning the Tables!

PROBLEM:
The table shows the results of a survey into participation in three types of regular exercise taken by people from three age groups.

Although the row and column totals are correct, one of the individual figures in the table has been typed incorrectly. Which is it?

Age	Type of exercise			
	Gym	Swimming	Jogging	Total
10-15	14	57	32	103
16-20	86	92	45	232
21-25	67	58	44	169
Total	167	207	130	504

The table below shows the finishing positions in the baseball league. The five teams play each other once each. Three points are awarded for a win and one for each team in a drawn match.How many of the games were drawn?

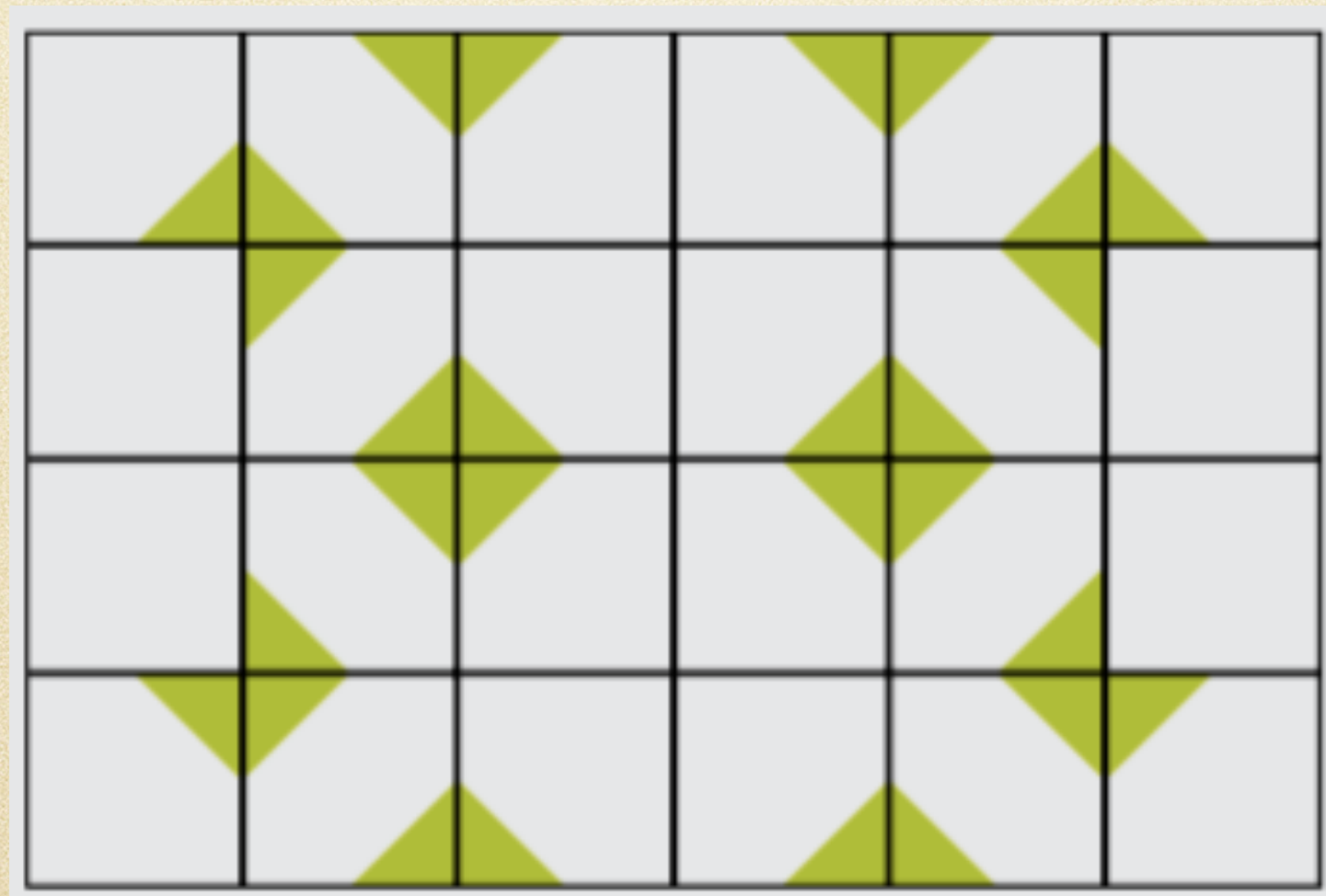| Team	Points
A	8
B	7
C	5
D	4
E	2

Digesting Diagrams!

PROBLEM:

The picture shows a tiled floor where 24 individual tiles with different printing on them are used to make up the overall pattern.

How many different patterns of tile are needed to make up the overall pattern?

SOLUTION:

Solving this requires a systematic evaluation of the picture. We not only need to identify the apparently different tiles, but also to look at how tiles can be used in different orientations. The procedure is to eliminate tiles one by one, noting each time whether a new tile is needed or whether one we have already seen can be used in a different orientation.

In fact, only three tiles are needed:

PROBLEM:

The map is a simple representation of the only roads joining four towns. Ali lives in town A and wishes to visit a friend in town C. He normally goes via town B but has discovered (before setting off) that the road between B and C is blocked by an accident. How much will this add to the journey?
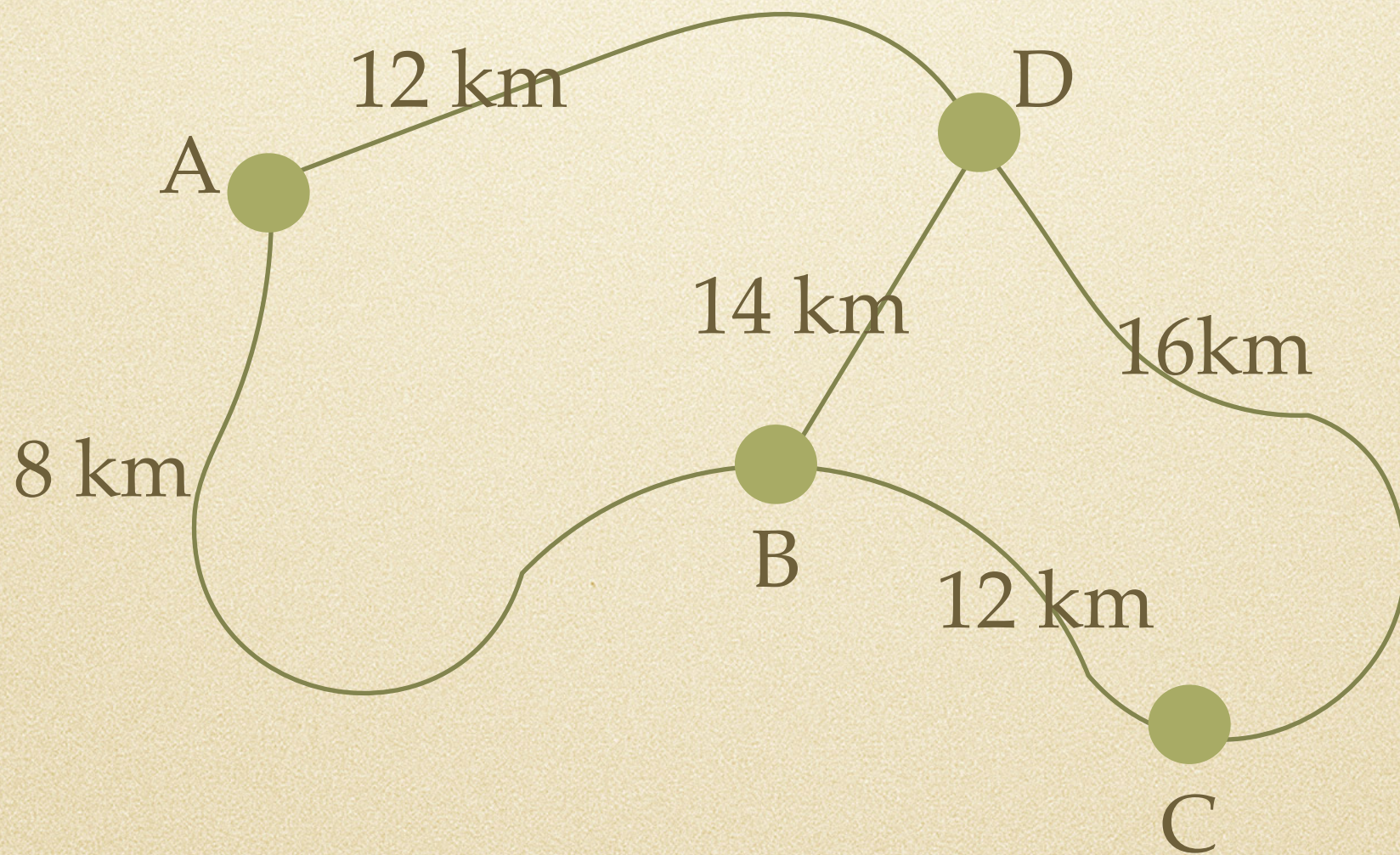
PROBLEM:

The graph shows the charges made by a printing company for making various number of posters.
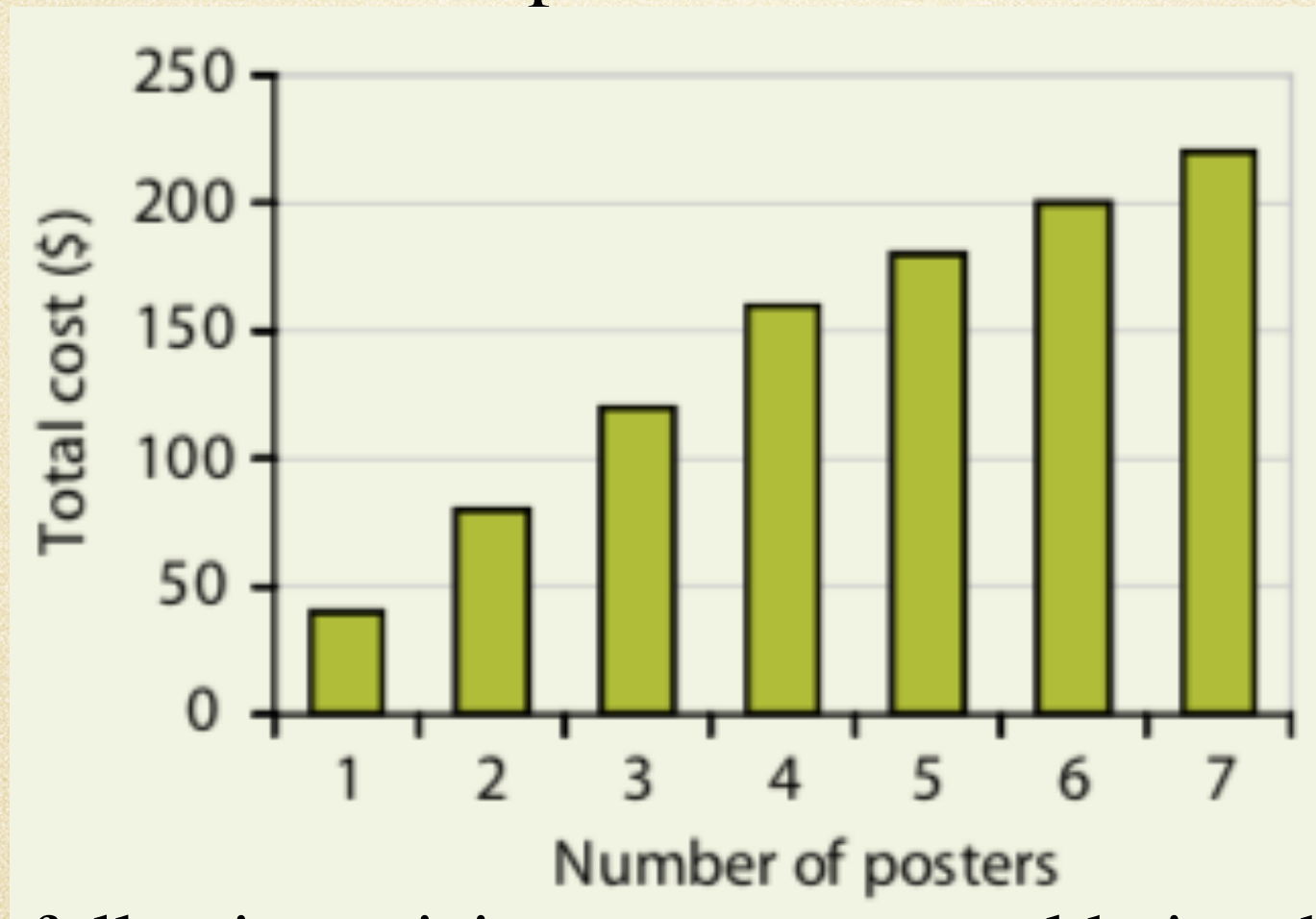
Which of the following pricing structures would give the graph shown?

A. $30 per poster

B. $50 set up charge+$20 per poster

C. $40 per poster for the first four, any extra $20 each

D. $30 set up charge, $30 per poster for the first four, any extra $20 each

PROBLEM:

The numbers of different colours of cars sold in city of Lahore are given in the following table.

Colour	Red	Yellow	Blue	Silver	Black
Number of cars sold	220	125	475	210	870

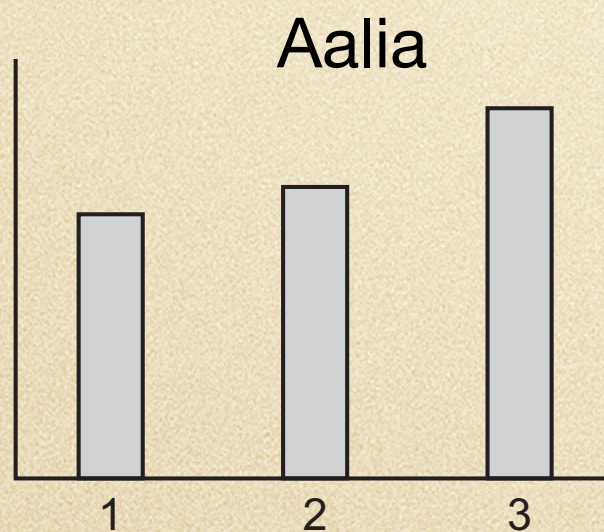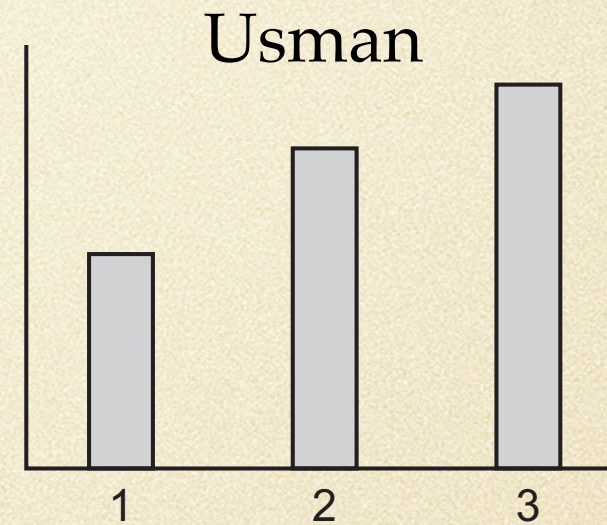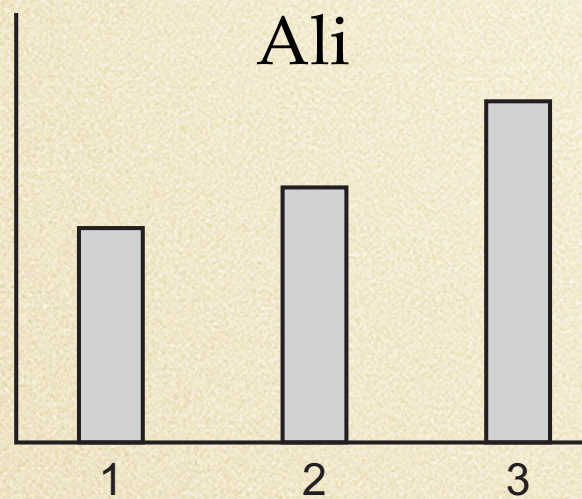Which of the following pie charts could represent this data?
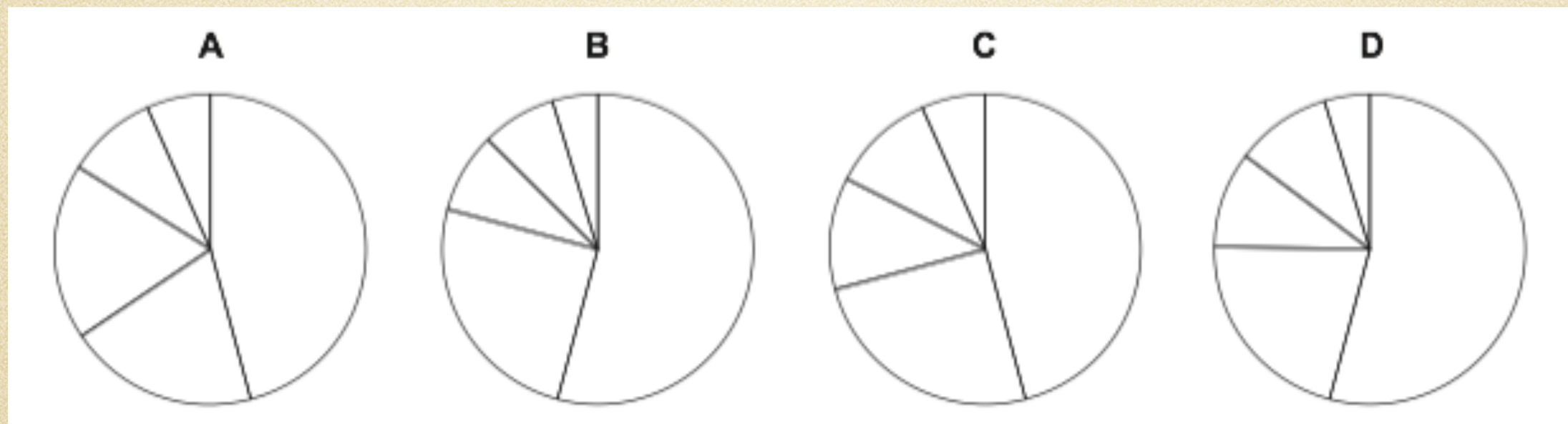
Questions for You!

PROBLEM:

A company gives a bonus to all of its salespeople who show a greater percentage increase in sales from year 2 to year 3 than they did from year 1 to year 2. Four salespeople's sales are shown in the graphs below.
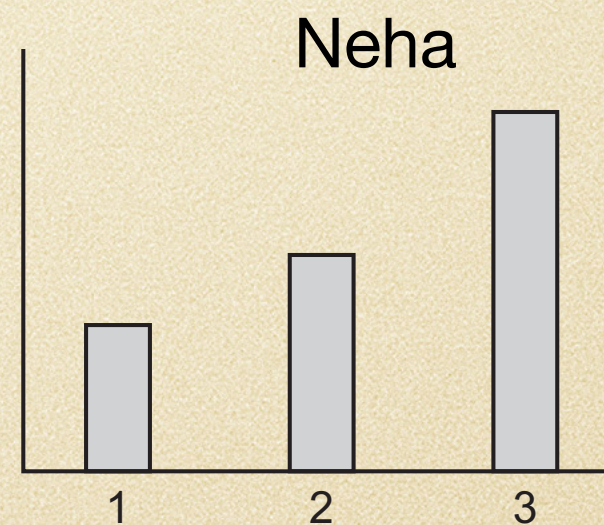
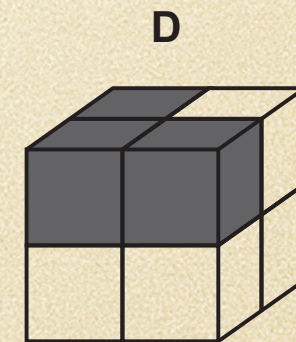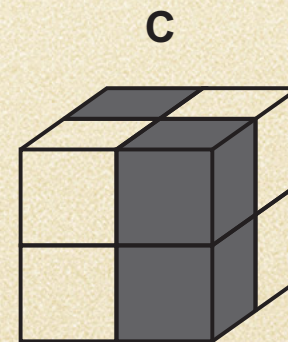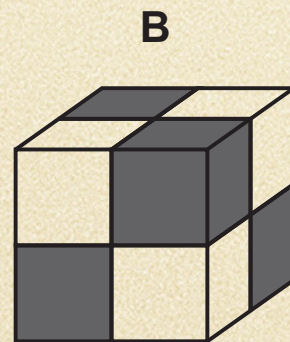If only three of these persons receive a bonus, which person does not receive a bonus?
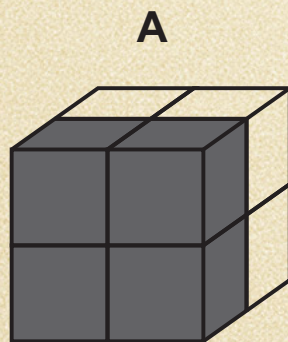
PROBLEM:

A large cube can be built out of these four bricks. Each brick consists of two small cubes bonded together; each small cube is either all white or all black.

Which one of the following large cubes cannot be built?

PROBLEM:

The map shows the roads between four towns with distances in km.
Adil is at town P and has to deliver groceries to the other three towns
in any order (never revisiting any town), finally returning to town P.
What is the minimum distance he has to cover?