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SECTION 1: QUERIES

1 Sol)

SELECT DEPARTMENT, count(*) from Employee group by DEPARTMENT;

2 Sol)

SELECT EMPLOYEE_ID, FIRST_NAME, DEPARTMENT from Employee where EMPLOYEE_ID in (select EMPLOYEE_ID from Employee where MANAGER not null);

3 Sol)

SELECT FIRST_NAME, LAST_NAME, MONTH(INCENTIVE_DATE), SUM(INCENTIVE_AMOUNT)
FROM Employee JOIN Incentives ON Employee.EMPLOYEE_ID =Incentives.EMPLOYEE_ID
GROUPBY(MONTH(Incentives.INCENTIVE_DATE));

4 Sol)

SELECT INCENTIVE_DATE from Incentives where EMPLOYEE_ID=x and
INCENTIVE_AMOUNT=(SELECT max(INCENTIVE_AMOUNT) from Incentives where
EMPLOYEE_ID =x)

SECTION 2:

5 Sol)

Start both the timers at a time.

Flip over 4 m timer upside down until it ends & so that when 7m timer is over, flip it.

There is sand remaining in 4m timer for one minute.

Start 7m timer and when one minute sand in 4m timer is over mark that point on 7m timer.

We will get one minute marking on 7m timer.

Now start 4m timer and then flip it over so that we get $4 + 4 = 8$ m and then start 7m timer up to one minute mark, we will get:

So, finally $4+4+1 = 9$ minutes.

6 Sol)

According to Bayes' theorem:

$$\begin{aligned} & \text{Prob}(\text{two girls} \mid \text{at least one girl}) \\ &= \text{Prob}(\text{at least one girl} \mid \text{two girls}) * \text{Prob}(\text{two girls}) / \text{Prob}(\text{at least one girl}) \\ &= \text{Prob}(\text{at least one girl} \mid \text{two girls}) * \text{Prob}(\text{two girls}) / (1 - \text{Prob}(\text{no girls})) \\ &= 1 * (1/4) / (1 - 1/4) \\ &= 1/3 \end{aligned}$$

So, the required probability is "**1/3**".

7 Sol)

While trying to sell radio advertising time, this advertisement asserts that radio publicizing will make organizations more productive. The proof referred to is a 10% expansion in business that the Ron's Cafe has encountered in the year during which it promoted on the nearby radio station.

This contention is unconvincing on the grounds that two sketchy presumptions should be made for the expressed proof to help the creator's decision. The principal supposition that will be that radio advertising alone has caused the expansion in business at the Ron's Cafe. This supposition that is sketchy in light of the fact that it neglects various different components that may have added to the Ron's prosperity. For instance, it may have changed proprietors or gourmet experts. It may have dispatched a coupon advertisement crusade in the neighborhood print media. Or on the other hand it may have changed or refreshed the menu.

One more chance is that a nearby contender left business. These are only a couple of the elements that could help clarify its development. Since the creator neglects to take out these conceivable outcomes, the suspicion being referred to require not be acknowledged. Regardless of whether it is conceded that radio promoting is answerable for the cafe's prosperity, another suspicion should be made before we can presume that radio publicizing will bring about expanded benefits for organizations as a rule. We should likewise expect that what is valid for the cafe will similarly be valid for most different organizations.

Yet, there are a wide range of significant contrasts among bistros and different organizations that could influence how radio crowds respond to their publicizing. We can't securely expect that, on the grounds that a little eatery has profited by radio publicizing, all neighborhood organizations will also profit. All in all, it would be unwise for a business to put resources into

radio publicizing exclusively based on the proof introduced. To reinforce the end, it should be set up that radio publicizing was the chief reason for expanded business at the cafe.

Whenever this is appeared, it should be resolved that the business being referred to is adequately like the Ron's cafe thus can anticipate comparable gets back from interest in radio advertisement time.