

1.

```
SELECT Department, COUNT (Employee_Id)
FROM Employee
GROUP BY Department
```

2.

```
SELECT First_Name, Last_Name, Department, MAX(Manager)
FROM Employee
GROUP BY Department
```

3.

```
SELECT SUM(Incentive_Amount)
FROM Employee INNER JOIN Incentives ON Employee_Ref_ID = Employee_ID WHERE
Employee_ID = "id" AND MONTH(Incentive_Date) = "month"
```

4.

```
SELECT SUM(Incentive_Amount)
FROM Incentives
GROUP BY MONTH(Incentive_Date).
```

5.

Start both timers together.

When the 4 minute timer is done, flip it. 7 minute timer will have 3 minutes left.

When the 7 minute timer is done, the 4 minute timer will have 1 minute left.

Now you can count to 9 minutes by simply leaving the 4 minute to expire (1 min), flip it and let it expire (4 min), flip it again and let it expire (4 min).

$1 + 4 + 4 = 9$.

6.

Bayes theorem.

$$P(2G/1G)=P(1G/2G)*P(2G)/P(1G)$$

$P(2G/1G)$ -probability that 2nd child is girl given 1st is girl.

$P(1G/2G)$ =condition that one child is girl

$P(2G)$ =probability of 2 girls=1/4

$P(1G)$ =probability of girl=3/4

$$P(2G/1G)=(1*1/4)/(3/4)$$

$$=1/3$$