**Question:**

If Jessica is unable to work on Tuesday, is there anyone able to cover the shift?

**Answer:**

Based on the provided schedule, if Jessica is unable to work on Tuesday, there are a few employees who may be able to cover the shift:  
- Mike: Available and qualified  
- Dean: Available and qualified  
- Sarah: Available but not equipped with special qualification  
- Demitry: Not available  
- Tom: Not available  
- Edward: Not available  
- Diane: Not available  
- Cheyenne: Not available  
  
Therefore, Mike or Dean could potentially cover the shift if Jessica is unable to work on Tuesday.

**Question:**

Who is working the least number of hours for the week?

**Answer:**

Based on the scheduled hours, Tom is working the least number of hours for the week.

**Question:**

Is it possible for Mike to exchange with Sarah on days Saturday and Wednesday?

**Answer:**

Based on the schedule, it is not possible for Mike to exchange with Sarah on Saturday and Wednesday. Mike is scheduled to work from 12:30 to 20:00 on Saturday and from 12:00 to 20:00 on Wednesday. Sarah is not scheduled to work on Saturday, and there is no schedule provided for her on Wednesday. Therefore, there cannot be an exchange between Mike and Sarah on these days.

**Question:**

If Tom has to leave mid-way through the shift on Monday, is there anyone able to cover these hours?

**Answer:**

Based on the provided schedule, Tom is scheduled to work from 08:00 to 13:00 on Monday. If he has to leave mid-way through the shift, let's say at 11:00, we need to find someone who is available to cover the remaining hours (11:00 to 13:00).  
  
From the schedule, we can see that the following employees have availability during that time frame:  
  
- Dean: Dean is available from 08:00 to 12:30 on Monday, which covers the remaining 2 hours required.  
  
Therefore, Dean would be able to cover the remaining hours if Tom has to leave mid-way through the shift on Monday.

**Question:**

If Jssica has to leave mid-way through the shift on Friday is there anyone able to cover these hours?

**Answer:**

Based on the provided schedule, Jessica's shift on Friday is from 08:00 to 16:00, which is a duration of 8 hours. If Jessica has to leave mid-way, there are two employees who could potentially cover her remaining hours, which are:  
  
1. Mike: Mike's shift on Friday is from 12:00 to 20:00, which overlaps with Jessica's shift. Therefore, Mike could potentially cover Jessica's remaining hours from 16:00 to 20:00.  
  
2. Sarah: Sarah's shift on Friday is from 14:00 to 18:30, which also overlaps with Jessica's shift. Therefore, Sarah could potentially cover Jessica's remaining hours from 16:00 to 18:30.  
  
Both Mike and Sarah have the availability to cover Jessica's remaining hours on Friday. However, it would be best to communicate with them to confirm their willingness and availability to cover the remaining hours.

**Question:**

If demand increases on Friday by 1 are there enough employees available to cover this demand?

**Answer:**

To determine if there are enough employees available to cover the increased demand on Friday, we need to consider the availability of each employee and compare it to the updated demand.  
  
Since the demand has increased by 1 on Friday, we can calculate the total demand for each time slot on Friday by adding 1 to the existing demand.  
  
Then, we will check if there are enough employees who are available on Fridays and have the special qualification to cover the increased demand.   
  
Here is the updated demand for Friday:  
  
 08:00:00 08:30:00 09:00:00 ... 18:30:00 19:00:00 19:30:00  
Day ...   
Friday 3 3 3 ... 3 2 2  
  
We can then compare this demand with the availability of each employee on Friday to see if there are enough employees available:  
  
 Name Special Qualification ... min\_hours\_per\_week max\_hours\_per\_week  
0 Jessica 1 ... 35 40.0  
1 Mike 1 ... 35 40.0  
2 Dean 1 ...

**Question:**

If demand increases on Friday by 1 are there enough employees available to cover this demand?

**Answer:**

To determine if there are enough employees available to cover the increased demand on Friday, we need to compare the total availability of employees to the updated demand.  
  
First, let's calculate the updated demand for Friday by increasing it by 1:  
Friday demand = Current demand + 1  
  
Next, let's calculate the total availability of employees for Friday. We will sum up the maximum hours per week for each employee who is available on Friday.  
  
Finally, we can compare the total availability of employees to the updated demand to determine if there are enough employees available to cover the increased demand on Friday.