

Task 4  $\rightarrow$ Part a  $\rightarrow$  first order logicdate: May 1, 2017 =  $D_1$ ,May 2, 2017 =  $D_2$ ,May 3, 2017 =  $D_3$ 

person: John = J

Mary = M

rain( $D$ ): if it rains on date  
else it is falsegive( $P_1, P_2, C, D$ ): if person  $P_1$  gives  
 $C$  on date  $D$   
else falseMow( $P, L, D$ ): if person  $P$  mows  
May 3, 2017, it is $\text{rain}(D_1) \Rightarrow \text{give}(J, M, C, D_2) \Rightarrow$ 

Part b:

 $\neg \text{rain}(D_1) \wedge \text{give}(J, M, L, D_2)$ 

Part c: Contract wasn't violated

R: False, J: True, M: True

The statements in the contracts

So, the contract wasn't violated

Part d:

R: It is rains on May 1, 2017

J: John gives Mary a check for  
on May 2, 2017

M: Mary mows the lawn on May

 $a: (R \Rightarrow J) \wedge (J \Rightarrow M)$  $b: \neg R \wedge J \wedge M$