Decision Variables:  
  
Hij = Number of respirators transported from hospital i to hospital j with i = [3, 5] and j = [1, 2, 4]  
Yij = 1 if transportation occurs from i to j, 0 if transportation does not occur from i to j with i = [3, 5] and j = [1, 2, 4]  
  
Minimize: Objective function  
  
100000 \* 38.27531841800928\*H31 + 200000\*Y31 +   
100000 \* 34.438350715445125\*H51 + 200000\*Y51 +   
100000 \* 26.0\*H32 + 200000\*Y32 +   
100000 \* 30.805843601498726\*H52 + 200000\*Y52 +   
100000 \* 43.01162633521314\*H34 + 200000\*Y34 +   
100000 \* 11.180339887498949\*H54 + 200000\*Y54  
  
Constraints:   
  
 1) Constraints for supplier hospitals:  
 Hospital H3: - H31 - H32 - H34 = -5  
 Hospital H5: - H51 - H52 - H54 = -10  
  
 2) Constraints for consumer hospitals:  
 Hospital H1: H31 + H51 = 5  
 Hospital H2: H32 + H52 = 5  
 Hospital H4: H34 + H54 = 5  
  
 3) Constraints for binary variables:  
 H31 <= 1000000 \* Y31  
 H32 <= 1000000 \* Y32  
 H34 <= 1000000 \* Y34  
 H51 <= 1000000 \* Y51  
 H52 <= 1000000 \* Y52  
 H54 <= 1000000 \* Y54  
  
 4) General constraints:  
  
 ['H31', 'H32', 'H34', 'H51', 'H52', 'H54'] >= 0 and integers.   
   
 ['Y31', 'Y32', 'Y34', 'Y51', 'Y52', 'Y54'] are binary variables.