Situation:

Mr. Mayo runs a sandwich stand for the ABC Sandwich Company. The company pays Mr. Mayo $30 per day plus $2 for each sandwich he sells during the week. The company pays Mr. Mayo $30 per day plus $4 for each sandwich he sells on the weekend.

On Thursday, Mr. Mayo made $112 selling sandwiches.

On Saturday, Mr. Mayo made $170 selling sandwiches.

Part A) Thursday can be represented by the following equation, where “S” represents the number of sandwiches.

\[2S + 30 = 112\]

How many sandwiches did Mr. Mayo sell on Thursday?

Show ALL work.

Part B) Write a representation for Saturday, using “S” to represent the number of sandwiches.
Part C) Mr. Mayo sets a goal for himself for Sunday to make more than $260. Write an inequality to represent this situation, using “S” to represent the number of sandwiches. Then solve that inequality to find out how many sandwiches he must sell to reach his goal. EXPLAIN what you did and why.

Part D) Mr. Mayo comes home from work on Monday, and claims to his wife that he didn’t make any money selling sandwiches. Is it possible that Mr. Mayo is telling the truth? EXPLAIN why you answered the way you did.