

## Part 1

## Decision Table for the Retirement Pension Policy:

		Combinations							
Inputs	Values	1	2	3	4	5	6	7	8
Apply for incentive before 06-11-2010	Y, N	Y	Y	Y	Y	N	N	N	N
Age	(80 > Age >= 63, Age >= 80)	80 > Age >= 63	80 > Age >= 63	Age >= 80	Age >= 80	80 > Age >= 63	80 > Age >= 63	Age >= 80	Age >= 80
Salary	(<90K, >=90K)	<90K	>=90K	<90K	>=90K	<90K	>=90K	<90K	>=90K
Effects									
C: 1.6 * Sal		X							
C: 1.6 * 90K + 1.5 * excess of 90k			X						
C: 1.55 * Sal				X					
C: 1.55 * 90k + 1.5 * excess of 90k					X				
Not eligible						X	X	X	X

**Optimized Decision Table:**

		Combinations				
Inputs	Values	1	2	3	4	5
Apply for incentive before 06-11-2010	Y, N	Y	Y	Y	Y	N
Age	(80 > Age >= 63, Age >= 80)	80 > Age >= 63	80 > Age >= 63	Age >= 80	Age >= 80	80 > Age >= 63 / Age >= 80
Salary	(<90K, >=90K)	<90K	>=90K	<90K	>=90K	<90K/>=90K
Effects						
C: 1.6 * Sal		X				
C: 1.6 * 90K + 1.5 * excess of 90k			X			
C: 1.55 * Sal				X		
C: 1.55 * 90k + 1.5 * excess of 90k					X	
Not eligible						X

The compensation multiplier for a person who is currently 64 with 20 years of teaching experience whose salary is \$95,000 will be **1.6 \* 90K + 1.5 \* 5k**

**Part 2**

- State table

Event/State	Waiting	Full Power	Half Power	Set Time	Enabled	Disabled	Operation
Full Power	Set power 600	Set power 600	Set power 600	None	None	None	None
Half Power	Set power 300	Set power 300	Set power 300	None	None	None	None
Timer	None	Set time, Get time	Set time, Get time	Set time, Get time	None	None	None
Number	None	None	None	Set time, Get time	None	None	None
Door Open	None	None	None	Display "waiting"	None	None	Display "waiting"
Door Closed	None	None	None	Display "ready"	None	Display "ready"	None
Start	None	None	None	None	Operate oven	None	Operate oven
Cancel	Display time	None	None	None	None	None	Display time

**Assumptions:**

For the microwave's state table, assume that the only possible combinations of states and events were included in the state diagram.

How many tests are required to fully test the solution?

7 (states)\* 8 (events) = **56**

- **State Test cases**

Test case ID	Current state	Command/Sensor	Action	Next state
T-1	Waiting	Full power	Set power 600	Full power

<b>T-2</b>	Waiting	Half power	Set power 300	Half power
<b>T-3</b>	Full power	Timer	Get number	Set Time
<b>T-4</b>	Full power	Half power	Set power 300	Half power
<b>T-5</b>	Half power	Timer	Get number	Set Time
<b>T-6</b>	Half power	Full power	Set power 600	Full power
<b>T-7</b>	Set Time	Number	Set time	Set Time
<b>T-8</b>	Set Time	Door Open	Display Waiting	Disabled
<b>T-9</b>	Set Time	Door Closed	Display Ready	Enabled
<b>T-10</b>	Disabled	Door Closed	Display Ready	Enabled
<b>T-11</b>	Enabled	Start	Operate Oven	Operation
<b>T-12</b>	Operation	Door Open	Display Waiting	Disabled
<b>T-13</b>	Operation	Cancel	Display time	Waiting
<b>T-14</b>	Operation	Timeout	Display time	Waiting