

1. For the following:

```

IF you buy a cheap-day return ticket
    catch a train after 9.30am
ELSE
    catch any train
ENDIF
Read the newspaper
Enjoy the train journey
    
```

a) What is the minimum number of test cases that are required to achieve 100% Statement Coverage?	
b) What is the minimum number of test cases that are required to achieve 100% Decision Coverage?	
c) How much decision coverage have I achieved if I buy a "cheap-day-return" ticket only?	

2. For the following pseudo code:

```

Read A
Read B
IF B = A
    Print "they are the same"
ELSE
    Print "they are different"
ENDIF
Print "End of processing"
    
```

Generate a minimum set of tests (values of A and B) that achieve 100% statement and 100% decision coverage

3. For the following:

```

IF the vending machine is not working
    call repair centre to fix
ELSE
    Insert money
    WHILE there is not enough money
        Display message "insert money"
        Insert more money
    ENDWHILE
    Select a drink
    Wait for drink to be dispensed
    Collect any change
ENDIF
Go back to work
    
```

a) Calculate the minimum number of tests required to achieve 100% statement coverage	
b) Calculate the minimum number of tests required to achieve 100% decision coverage	

4. Given the following pseudo code:

```

Read P
Read Q
IF P+Q > 100
    Print "Large"
ELSE
    IF P+Q > 50
        Print "Medium"
    ENDIF
ENDIF
Do something else
    
```

a) What is the minimum number of test cases that are required to achieve 100% Statement Coverage:	
b) What is the minimum number of test cases that are required to achieve 100% Decision Coverage	
c) Provide values for P and Q that will achieve 100% Statement Coverage	
d) Will these same values achieve 100% Decision Coverage	

5. For the following pseudo code:

```

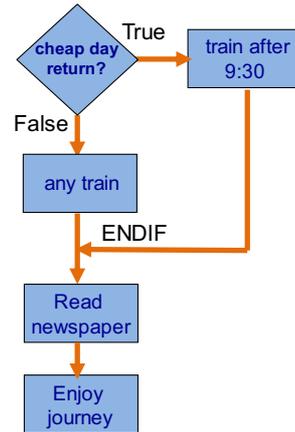
Read (Gross Pay)
Read (Allowances)
Taxable Pay = Gross Pay - Allowances
IF Taxable Pay > 30,000
    Tax Due = Taxable Pay * 40%
ELSE
    IF Taxable Pay > 15,000
        Tax Due = Taxable Pay * 23%
    ELSE
        Tax Due = Taxable Pay * 10%
    ENDIF
ENDIF
Store Tax Due
    
```

a) What is the minimum number of test cases that are required to achieve 100% Statement Coverage:	
b) What values are required for Gross Pay and Allowances to achieve 100% Decision Coverage?	

1. For the following:

```

IF you buy a cheap-day return ticket
    catch a train after 9.30am
ELSE
    catch any train
ENDIF
Read the newspaper
Enjoy the train journey
    
```

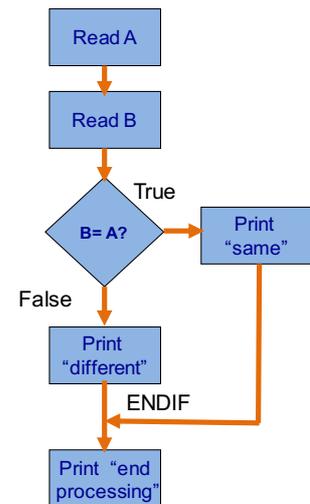


a) What is the minimum number of test cases that are required to achieve 100% Statement Coverage?	2
b) What is the minimum number of test cases that are required to achieve 100% Decision Coverage?	2
c) How much decision coverage have I achieved if I buy a "cheap-day-return" ticket only?	50% (1 out of 2)

2. For the following pseudo code:

```

Read A
Read B
IF B = A
    Print "they are the same"
ELSE
    Print "they are different"
ENDIF
Print "End of processing"
    
```

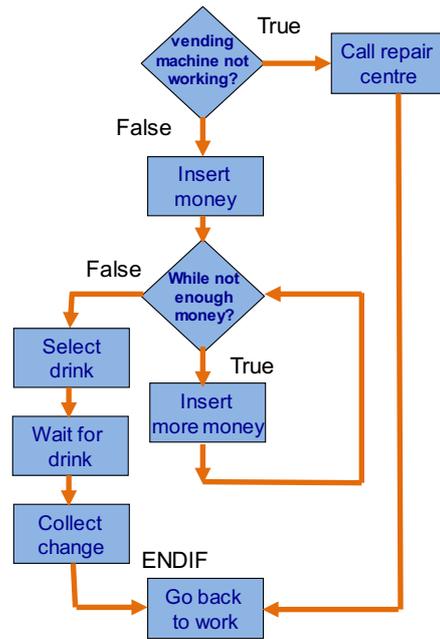


Generate a minimum set of tests (values of A and B) that achieve 100% statement and 100% decision coverage
Test Case 1: A = 5, B = 5 – expected output “they are the same”
Test Case 2: A = 5, B = 4 – expected output “they are different”

3. For the following:

```

IF the vending machine is not working
    call repair centre to fix
ELSE
    Insert money
    WHILE there is not enough money
        Display message "insert money"
        Insert more money
    ENDWHILE
    Select a drink
    Wait for drink to be dispensed
    Collect any change
ENDIF
Go back to work
    
```

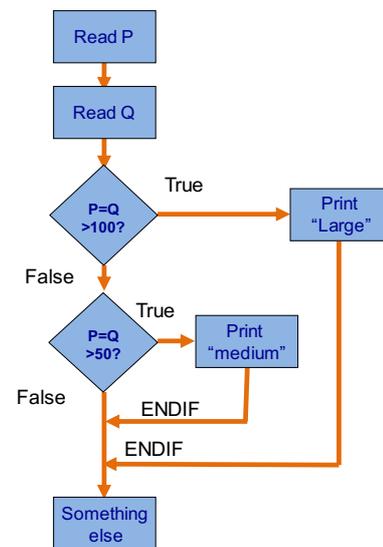


a) Calculate the minimum number of tests required to achieve 100% statement coverage	3
b) Calculate the minimum number of tests required to achieve 100% decision coverage	3

4. Given the following pseudo code:

```

Read P
Read Q
IF P+Q > 100
    Print "Large"
ELSE
    IF P+Q > 50
        Print "Medium"
    ENDIF
ENDIF
Do something else
    
```

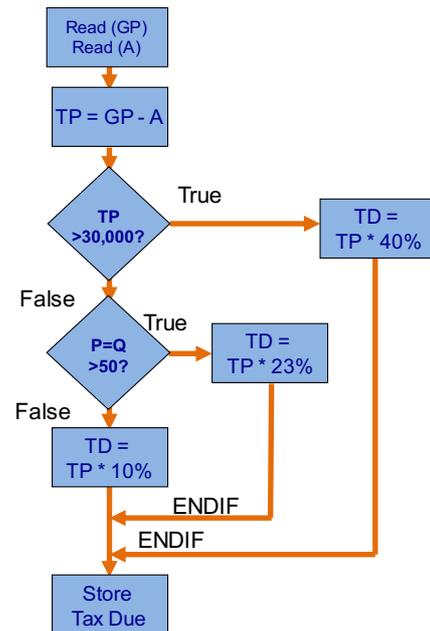


a) What is the minimum number of test cases that are need to achieve 100% Statement Coverage:	2
b) What is the minimum number of test cases that are required to achieve 100% Decision Coverage	3
c) Provide values for P and Q that will achieve 100% Statement Coverage	Test Case 1: P = 50, Q = 60 Test Case 2: P = 50, Q = 50
d) Will these same values achieve 100% Decision Coverage	No, a further test is needed, e.g. P = 20, Q = 20

5. For the following pseudo code:

```

Read (Gross Pay)
Read (Allowances)
Taxable Pay = Gross Pay - Allowances
IF Taxable Pay > 30,000
    Tax Due = Taxable Pay * 40%
ELSEIF
    IF Taxable Pay > 15,000
        Tax Due = Taxable Pay * 23%
    ELSE
        Tax Due = Taxable Pay * 10%
    ENDIF
ENDIF
Store Tax Due
    
```



a) What is the minimum number of test cases that are required to achieve 100% Statement Coverage:	3
b) What values are required for Gross Pay and Allowances to achieve 100% Decision Coverage?	
Test Case 1: Gross Pay = 50,000, Allowances = 15,000 (Taxable Pay = 35,000)	
Test Case 2: Gross Pay = 50,000, Allowances = 22,000, (Taxable Pay = 28.000)	
Test Case 3: Gross Pay = 50,000, Allowances = 40,000, (Taxable Pay = 10,000)	