**Test Plan for Problem 1**

**Checkpoints**

Program prints the purpose of the program and the title Y / N

Prompts user for input and validates input Y / N

Exits if user enters invalid data more than three times Y / N

Exits after the calendar is printed Y / N

Prints the days of the week evenly spaced apart Y / N

Shows the year and month above the calendar Y / N

When a month does not begin on Sunday, spaces are added to align the first day of

the month to the correct day of the week. Y / N

**Test data**

Input Expected Output Actual Output

-1 Invalid value prompt, asks user for a valid

year value.

2008 13 Invalid value prompt, asks user for a valid

first day of first month value.

2008 4 -3 Invalid value prompt, asks user for a valid

month value.

2008 2 12 December 2008 calendar page starting on

Monday, with 31 days in total. Also, the

month ends on a Friday.

K Invalid value prompt, asks user for a valid

year value.

2 ^Z Invalid value prompt, asks user for a valid

first day of first month value.

-1 -1 -1 Keeps prompting the user for a valid year

value, until the third invalid entry. The

program then exits.

2008 2 2 Since 2008 is a leap year, the month

number 2 –February- should have

29 days. Also, the first day should

Be on Friday and the last day on Friday.

Input Expected Output Actual Output

2007 1 2 Since 2007 is not a leap year, February

should contain 28 days. Also, the month

Should begin on Thursday and end on

Wednesday.

2007k 1K 4K Output calendar for Apr 1, 2007.

**Test Plan for Problem 2**

**Checkpoints**

Program prints the purpose of the program and the title Y / N

Prompts user for input and validates input Y / N

Warns the user if the payment schedule will be quite long and give the user the

option to either print or exit the program Y / N

Prints out the payment table in an organized manor Y / N

Warns the user if the interest rate is so high that the mortgage will never be paid off

at the current interest rate and monthly payment. Y / N

Allows user to adjust monthly payment and interest rate if too high Y / N

Tells the user how many days and months it will take to pay off the mortgage

If the printout is long, the approximation of how many months it will take to Y / N

pay off the mortgage is relatively accurate. Y / N

Displays the numbers with a precision of 2 Y / N

Calculates how much total interest was paid Y / N

Displays total cost of mortgage with interest Y / N

**Test data**

Input Expected Output Actual Output

-1 Invalid input message and prompts

the user to enter in a valid value

for the principal.

1000 100 0 Prints out a payment schedule for

10 months.

1000 0 Invalid input message and prompts

the user to enter in a valid value

for the monthly payment.

10000 1 0 Warns the user that the printout will be long

and approximates how long it will be using a

formula[[1]](#footnote-2).

Input Expected Output Actual Output

10000 100 100 A message telling the user that the interest rate

is too high to every pay the mortgage off with

the current monthly payments. Also, the user

will be given the option to change both or one

or the other, or to exit the program and not

print the schedule.

10000 10 100 1 0 First the program will prompt the user telling

him/her that the initial interest and monthly

payment together will never pay off the

mortgage. Then after the user decides to

change the interest rate(1) to 0, the program

will warn the user that the payment schedule

will be long.

Kdk Invalid input message and prompts

the user to enter in a valid value.

1000k 200k 0k The program will calculate a mortgage payment

schedule with a principal of 1000 , a monthly

payment of 200, and no monthly interest rate.

10 5 5 Calculates that the interest total interest paid is:

1. 10 + (10 \* 5/100) – 5 =5.5 <- 5
2. 5.5+ (5.5 \* 5/100) – 5 ≈ .77 <-10
3. .775 +(.775\*5/10) –.81= 0 <-10.81

Which means the total interest paid here

Is approximately 81 cents.

**Test Plan for Problem 3**

**Checkpoints**

Program prints the purpose of the program and the title Y / N

Does not display 1 as a prime number Y / N

Splits the printout into columns and rows of 10 Y / N

Does not contain repeat numbers Y / N

Spacing is relatively even Y / N

Printout is easy to read Y / N

Correctly outputted all the EMIRPS Y / N

**Test data:** None, no user interaction.

1. (1.0 /((10000 -((10000 - 1) + 10000 \* ( 1/100 )))/10000)) = 10000 [↑](#footnote-ref-2)