Palomar College
Computer Science &
Information Technology
CSCI 112 Programming Fundamentals I
Chapter 5 – HW 7

1. Predict the output of this program fragment:

```
i = 0;
while (I <= 5)
   {
        printf("%3d %3d\n",i, 10 – i)
        i = i + 1;
   }
```

0 10
1 9
2 8
3 7
4 6
5 5

2. What is displayed by this program fragment for an input of 8?

```
scanf("%d", &n);
ev = 0;
while (ev < n)
        {
        printf("%d", ev);
        ev = ev + 2;
        }

printf("\n");
```

0
2
4
6

Palomar College
Computer Science &
Information Technology
CSCI 112 Programming Fundamentals I
Chapter 5 – HW 7

3. Write a program fragment that produces this output:

0	1
1	2
2	4
3	8
4	16
5	32
6	64

```
y = 1
x = 0
while (x <= 6)
{
   printf ("%d" "%d", x, y)
      x = x + 1
      y = y * 2
}
```

4. Design a while loop that lets the user enter a number. The number should be multiplied by 10, and the result stored in a variable named product. The loop should iterate as long as product contains a value less than 100.

```
int num = 0;
int product = 0;

while (product < 100)
   { scanf ("%d", &num);
     product = num * 10;
   }
```

Palomar College
Computer Science &
Information Technology
CSCI 112 Programming Fundamentals I
Chapter 5 – HW 7

5. Design a do while loop that asks the user to enter two numbers. The numbers should be added and the sum displayed. The loop should ask the user whether he or she wishes to perform the operation again. If so, the loop should repeat; otherwise it should terminate.

```
int x =0; , y=0; , con. = 0; int sum = 0;
do { scanf("%d" &x);
     scanf("%d" &y);
     sum = x+y;
     Printf("%d\n", sum);
     Printf("wanna cont? 0 for yes, 1 for No")
          Scanf("%d", &con);
while (con == 0)
```

6. Design a for loop that displays the following set of numbers:
0, 10, 20, 30, 40, ... 1000

```
for (int x=0; x =!1010 ; x =x+10)
     printf("%d\n", x);
```

7. Design a loop that asks the user to enter a number. The loop should iterate 10 times and keep a running total of the numbers entered.

```
double total = 0.0;
for (double num =0.0, x = 0; x<10; total =total+num, ++x)
  {  Print(enter a number);
     Scanf("%lf" &num); }
     printf("%lf", total);
```

8. Convert the while loop in the following code to a do-while loop:

Palomar College
Computer Science &
Information Technology
CSCI 112 Programming Fundamentals I
Chapter 5 – HW 7

```
int x = 1;
while (x > 0)
        {print "enter a number. "
        input x;
        }
```

```
int x = 1;
do {
    print ("enter a number.");
     scanf ("%d", &x);  }
while (x > 0);
```

9. Convert the do-while loop in the following code to a while loop:

```
char ans = ' ';
do
{
        print" are you sure you want to quit?";
        input ans;
} while (ans != 'y' && ans != 'y')
```

```
char ans = ' ';
while (ans != 'y' && ans != 'Y')
        print (are you sure you want to quit?)
        input ans;
```

10. Convert the following while loop to a for loop

```
int count = 0
while (count < 50)
```

Palomar College
Computer Science &
Information Technology
CSCI 112 Programming Fundamentals I
Chapter 5 – HW 7

{print "The count is", count
count = count + 1;
}

```
for ( int count = 0; count < 50; ++count)
    print("The count is: %d", count);
```

11. Calories Burned
Running on a particular treadmill you burn 3.9 calories per minute. Design a program that uses a loop to display the number of calories burned after 10, 15, 20, 25 and 30 minutes.

```
int x = 0;
int ~~double~~ time = 0.0;
calories = 0.0;
while (x < 5)
    calories = time * 3.9
    print (calories burnt after %d: %.1f, time, calories)
    ++x
    time = time + 5;
```