HIT 265 C Programming – Tutorial 1 Solutions

Question 1

```
1 /* Exercise 1 Solution */
2 #include <stdio.h>
3
4 int main( void )
5 {
6 int x; /* define first number */
7 int y; /* define second number */
8
9 printf( "Enter two numbers: " ); /* prompt user */
10 scanf( "%d%d", &x, &y ); /* read values from keyboard */
11
12 /* output results */
13 printf( "The sum is %d\n", x + y );
14 printf( "The product is %d\n", x * y );
15 printf( "The difference is %d\n", x - y );
16 printf( "The quotient is %d\n", x / y );
17 printf( "The remainder is %d\n", x % y );
18 return 0; /* indicate successful termination */
19 } /* end main */
```

Question 2

```
1 /* Exercise 2 Solution */
2 #include <stdio.h>
3
4 int main( void )
5 {
6 int x; /* define first number */
7 int y; /* define second number */
8
9 printf( "Enter two numbers: " ); /* prompt */
10 scanf( "%d%d", &x, &y ); /* read two integers */
11
12 /* compare the two numbers */
13 if ( x > y ) {
14 printf( "%d is larger\n", x );
15 } /* end if */
16
17 if ( x < y ) {
18 printf( "%d is larger\n", y );
19 } /* end if */
20
21 if ( x == y ) {
22 printf( "These numbers are equal\n" );
23 } /* end if */
24
25 return 0; /* indicate successful termination */
26 } /* end main */
```

Question 3

```c
1  /* Exercise 3 Solution */
2  #include <stdio.h>
3
4  int main( void )
5  {
6     int a; /* define first integer */
7     int b; /* define second integer */
8     int c; /* define third integer */
9     int smallest; /* smallest integer */
10    int largest; /* largest integer */
11
12    printf( "Input three different integers: " ); /* prompt user */
13    scanf( "%d%d%d", &a, &b, &c ); /* read three integers */
14
15    /* output sum, average and product of the three integers */
16    printf( "Sum is %d\n", a + b + c );
17    printf( "Average is %d\n", ( a + b + c ) / 3 );
18    printf( "Product is %d\n", a * b * c );
19
20    smallest = a; /* assume first number is the smallest */
21
22    if ( b < smallest ) { /* is b smaller? */
23       smallest = b;
24    } /* end if */
25
26    if ( c < smallest ) { /* is c smaller? */
27       smallest = c;
28    } /* end if */
29
30    printf( "Smallest is %d\n", smallest );
31
32    largest = a; /* assume first number is the largest */
33
34    if ( b > largest ) { /* is b larger? */
35       largest = b;
36    } /* end if */
37
38    if ( c > largest ) { /* is c larger? */
39       largest = c;
40    } /* end if */
41
42    printf( "Largest is %d\n", largest );
43    return 0; /* indicate successful termination */
44  } /* end main */
```

Question 4

```c
/* Exercise 4 Solution: BMI.c
Making a Difference: Body Mass Index Calculator */

#include <stdio.h>

/*function main begins program execution*/
int main ( void )
{
double weight; /* weight of the person */
double height; /* height of the person */
double BMI; /* user's BMI */

/* get user's height */
printf("Please enter your height (in metres): ");
scanf("%lf", &height);

/* get user's weight */
printf("Please enter your weight (in kg): ");
scanf("%lf", &weight);

BMI = weight/(height*height); /* Calculate BMI */

printf("Your BMI is %lf\n\n", BMI); /* output BMI */

/* output data to user */
printf("BMI VALUES\n");
printf("Underweight:\tless than 18.5\n");
printf("Normal:\t\tbetween 18.5 and 24.9\n");
printf("Overweight:\tbetween 25 and 29.9\n");
printf("Obese:\t\t30 or greater\n");
return 0; /* indicates successful termination */
} /* end main */
```