Solutions to Assignment 1 - C Programming

Question 1

The only additional statement required is a return statement with an expression that computes the square of the argument.

```
int square ( int x )
{
  return x * x ;
}
```

Question 2

This solution uses an index variable i to iterate over the n elements in the array. A variable sum is used to add up the squares as computed by the function above.

The question contains a mistake and calls the square function sq.

```
int sums ( int x[], int n )
{
  int i, sum ;
  sum = i = 0 ;
  while ( i < n ) {
    sum = sum + square ( x[i] ) ;
    i = i + 1 ;
  }
  return sum ;
}
```

Question 3

This solution uses an index variable n which is also used to count the number of characters preceeding the terminating zero (null) character.

```
int len ( char s[] )
{
  int n ;
  n = 0 ;
  while ( s[n] != 0 ) {
    n = n + 1 ;
  }
  return n ;
}
```

The following main() function is used to test the above functions. Note that the is an error in the assignment as only the first value of the array s (s[0]) was being set.

```
void main ( void )
{
  int z [ 3 ] = { 1, 2, 3 } ;
  char s[3] ;

  s[0]='H' ;
  s[1]='i' ;
  s[2]=0 ;

  printf ( "sums returns %d and len returns %d\n",
   sums( z, 3 ), len(s) ) ;
}
```