Selection Statements
Lecture 3 Assignments

1. The following `if` statement is unnecessarily complicated. Simplify it as much as possible. (*Hint:* The entire statement can be replaced by a single assignment.)

```
if (age >= 13)
   if (age <= 19)
      teenager = true;
   else
      teenager = false;
else if (age < 13)
   teenager = false;
```

Save your code as `as1.c`

Program:

```c
#include <stdio.h>
#include <stdbool.h>

int main (void)
{
   int age;
   bool teenager = false;

   printf("Enter age: ");
   scanf("%d", &age);

   if (age >= 13 && age <= 19) {
      teenager = true;
   }

   printf("Teenager: %s\n", teenager ? "true" : "false");

   return 0;
}
```

2. Write a C program that does the following:

   Enter a two-digit number: 25
   Number entered in words: twenty-five

   Program:

```c
#include <stdio.h>

int main(void)
{
   int num1, num2;

   // input number from user
   printf("Enter a two-digit number: ");
   scanf("%1d%1d", &num1, &num2);

   printf("Number entered in words: ");

   // print word for the first digit
   switch (num1)
   {
      case 1:
         // 10 - 19 special treatment
         switch (num2)
         {
            case 0:
               printf("ten");
               return 0;
            case 1:
               printf("eleven");
               return 0;
            case 2:
               printf("twelve");
               return 0;
            case 3:
               printf("thirteen");
               return 0;
            case 4:
               printf("fourteen");
               return 0;
            case 5:
               printf("fifteen");
               return 0;
            case 6:
               printf("sixteen");
               return 0;
            case 7:
               printf("seventeen");
               return 0;
            case 8:
               printf("eigthteen");
               return 0;
            case 9:
               printf("nineteen");
               return 0;
         }
      case 2:
         printf("twenty");
         break;
      case 3:
         printf("thirty");
         break;
      case 4:
         printf("forty");
         break;
      case 5:
         printf("fifty");
         break;
      case 6:
         printf("sixty");
         break;
      case 7:
         printf("seventy");
         break;
      case 8:
         printf("eighty");
         break;
      case 9:
         printf("ninety");
         break;
   }

   // print word for the second digit
   switch (num2)
   {
      case 1:
         printf("-one");
         break;
      case 2:
         printf("-two");
         break;
      case 3:
         printf("-three");
         break;
      case 4:
         printf("-four");
         break;
      case 5:
         printf("-five");
         break;
      case 6:
         printf("-six");
         break;
      case 7:
         printf("-seven");
         break;
      case 8:
         printf("-eight");
         break;
      case 9:
         printf("-nine");
         break;
   }

   return 0;
}
```