(*c*) BLUE, if either b or B is assigned to color,

(*d*) BLACK, if color is assigned any other character.

6.56 Write an appropriate control structure that will examine the value of a floating-point variable called temp and print one of the following messages, depending on the value assigned to temp.

(*a*) ICE, if the value of temp is less than 0.

(*b*) WATER, if the value of temp lies between 0 and 100.

(*c*) STEAM, if the value of temp exceeds 100.

Can a switch statement be used in this instance?

6.57 Write a for loop that will read the characters in a character-type array called text and write the characters backwards into another character-type array called backtext. Assume that text contains 80 characters. Use the comma operator within the for loop.

6.58 Describe the output that will be generated by each of the following C programs. (Note the similarities in the programs that are shown across from each other.)

(*a*)
```
#include <stdio.h>

main()

{
    int i = 0, x = 0;

    while (i < 20)   {
       if (i % 5 == 0)   {
          x += i;
          printf("%d ", x);
       }
       ++i;
    }
    printf("\nx = %d", x);
}
```

(*b*)
```
#include <stdio.h>

main()

{
    int i = 0, x = 0;

    do  {
          if (i % 5 == 0)   {
             x++;
             printf("%d ", x);
          }
          ++i;
    }  while (i < 20);
    printf("\nx = %d", x);
}
```

(*c*)
```
#include <stdio.h>

main()

{
    int i = 0, x = 0;

    for (i = 1; i < 10; i *= 2)   {
        x++;
        printf("%d ", x);
    }
    printf("\nx = %d", x);
}
```

(*d*)
```
#include <stdio.h>

main()

{
    int i = 0, x = 0;

    for (i = 1; i < 10; ++i)   {
        if (i % 2 == 1)
           x += i;
        else
           x--;
        printf("%d ", x);
    }
    printf("\nx = %d", x);
}
```

(*e*)
```
#include <stdio.h>

main()

{
    int i = 0, x = 0;

    for (i = 1; i < 10; ++i)   {
        if (i % 2 == 1)
           x += i;
        else
           x--;
        printf("%d ", x);
        continue;
    }
    printf("\nx = %d", x);
}
```

(*f*)
```
#include <stdio.h>

main()

{
    int i = 0, x = 0;

    for (i = 1; i < 10; ++i)   {
        if (i % 2 == 1)
           x += i;
        else
           x--;
        printf("%d ", x);
        break;
    }
    printf("\nx = %d", x);
}
```

(*g*)
```
#include <stdio.h>

main()

{
    int i, j, x = 0;

    for (i = 0; i < 5; ++i)
        for (j = 0; j < i; ++j)   {
            x += (i + j - 1);
            printf("%d ", x);
        }
    printf("\nx = %d", x);
}
```

(*h*)
```
#include <stdio.h>

main()

{
    int i, j, x = 0;

    for (i = 0; i < 5; ++i)
        for (j = 0; j < i; ++j)   {
            x += (i + j - 1);
            printf("%d ", x);
            break;
        }
    printf("\nx = %d", x);
}
```

(*i*)
```
#include <stdio.h>

main()

{
    int i, j, x = 0;

    for (i = 0; i < 5; ++i)   {
        for (j = 0; j < i; ++j)
            x += (i + j - 1);
            printf("%d ", x);
            break;
    }
    printf("\nx = %d", x);
}
```

(*j*)
```
#include <stdio.h>

main()

{
    int i, j, k, x = 0;

    for (i = 0; i < 5; ++i)
        for (j = 0; j < i; ++j)   {
            k = (i + j - 1);
            if (k % 2 == 0)
               x += k;
            else
               if (k % 3 == 0)
                  x += k - 2;
            printf("%d ", x);
        }
    printf("\nx = %d", x);
}
```

(*k*)
```
#include <stdio.h>

main()

{
    int i, j, k, x = 0;

    for (i = 0; i < 5; ++i)
        for (j = 0; j < i; ++j)   {

            switch (i + j - 1)   {

            case -1:
            case  0:
                  x += 1;
                  break;

            case  1:
            case  2:
            case  3:
                  x += 2;
                  break;

            default:
                  x += 3;
            }
            printf("%d ", x);
        }
    printf("\nx = %d", x);
}
```

(*l*)
```
#include <stdio.h>

main()

{
    int i, j, k, x = 0;

    for (i = 0; i < 5; ++i)
        for (j = 0; j < i; ++j)   {

            switch (i + j - 1)   {

            case -1:
            case  0:
                  x += 1;
                  break;

            case  1:
            case  2:
            case  3:
                  x += 2;


            default:
                  x += 3;
            }
            printf("%d ", x);
        }
    printf("\nx = %d", x);
}
```