

SOLUTIONS

FOR LOOP

Q1

```
#include <stdio.h>

int main() {

    int num, sum = 0;

    printf("Enter a number: ");

    scanf("%d", &num);


    for(; num > 0; num /= 10) {

        sum += num % 10;

    }

    printf("Sum of digits = %d", sum);

    return 0;

}
```

NESTED FOR LOOP

Q2

```
#include <stdio.h>

int main() {

    int n = 5;

    for(int i = 1; i <= n; i++) {

        // print spaces

        for(int j = i; j < n; j++) {

            printf(" ");

        }

        // print stars

        for(int k = 1; k <= i; k++) {

            printf("* ");

        }

    }

}
```

```

    }

    printf("\n");
}

return 0;
}

```

Q3

```

#include <stdio.h>

int main() {

    int n;

    printf("Enter a number: ");

    scanf("%d", &n);

    printf("Factor pairs of %d:\n", n);

    for(int i = 1; i <= n; i++) {

        for(int j = 1; j <= n; j++) {

            if(i * j == n)

                printf("(%d, %d) ", i, j);

        }

    }

    return 0;
}

```

WHILE LOOP

Q1

```

#include <stdio.h>

int main() {

    int i = 1;

    while(i <= 20) {

        if(i % 2 != 0)

            printf("%d ", i);
    }
}

```

```
        i++;  
    }  
    return 0;  
}
```

NESTED WHILE LOOP

Q1

```
#include <stdio.h>  
  
int main() {  
    int i = 1;  
    char ch = 'A';  
    while(i <= 5) {  
        int j = 1;  
        while(j <= i) {  
            printf("%c ", ch);  
            j++;  
        }  
        ch++;  
        printf("\n");  
        i++;  
    }  
    return 0;  
}
```

DO WHILE LOOP

Q1

```
#include <stdio.h>  
  
int main() {  
    int num;  
    do {  
        printf("Enter a number (0 to stop): ");
```

```
    scanf("%d", &num);  
} while(num != 0);  
printf("Loop ended!");  
return 0;  
}
```

NESTED DO WHILE LOOP

Q1

```
#include <stdio.h>  
  
int main() {  
    int i = 0;  
    do {  
        int j = 0;  
        do {  
            int k = 0;  
            do {  
                if(i + j + k == 9)  
                    printf("%d%d%d ", i, j, k);  
                k++;  
            } while(k <= 9);  
            j++;  
        } while(j <= 9);  
        i++;  
    } while(i <= 9);  
    return 0;  
}
```