

1- Calculate the square root of a number

حساب الجذر التربيعي لعدد

Input

```
Enter a number: 16
```

Output

```
Square root: 4.000000
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <math.h>

int main() {
    double num, result;
    printf("Enter a number: ");
    scanf("%lf", &num);

    result = sqrt(num);

    printf("Square root: %lf\n", result);

    return 0;
}
```

2- Calculate the power of a number

حساب power الرقم

Input

```
Enter base: 2
Enter exponent: 3
```

Output

```
Result: 8.000000
```

Solution

```

// www.gammal.tech

#include <stdio.h>
#include <math.h>

int main() {
    double base, exponent, result;
    printf("Enter base: ");
    scanf("%lf", &base);
    printf("Enter exponent: ");
    scanf("%lf", &exponent);

    result = pow(base, exponent);

    printf("Result: %lf\n", result);

    return 0;
}
```

3- Calculate the natural logarithm of a number

حساب اللوغاريتم الطبيعي لعدد

Input

```
Enter a number: 32
```

Output

```
Natural logarithm: 3.465736
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <math.h>

int main() {
    double num, result;
    printf("Enter a number: ");
    scanf("%lf", &num);

    result = log(num);

    printf("Natural logarithm: %lf\n", result);

    return 0;
}
```

4- Calculate the remainder of division of two numbers

حساب باقي قسمة عددين

Input

```
Enter dividend: 3
Enter divisor: 2
```

Output

```
Remainder: 1
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <math.h>

int main() {
    int dividend, divisor, result;
    printf("Enter dividend: ");
    scanf("%d", &dividend);
    printf("Enter divisor: ");
    scanf("%d", &divisor);

    result = dividend % divisor;

    printf("Remainder: %d\n", result);

    return 0;
}
```

5- Calculate the square of a number without using pow

حساب مربع الرقم without using pow

Input

```
Enter a number: 2
```

Output

```
Square: 4.000000
```

Solution

```
// www.gammal.tech
#include <stdio.h>

int main() {
    double num, result;
    printf("Enter a number: ");
    scanf("%lf", &num);

    result = num * num;

    printf("Square: %lf\n", result);

    return 0;
}
```

6- Calculate the power of a number without using pow

حساب power الرقم without using pow

Input

```
Enter base: 2
Enter exponent: 3
```

Output

```
Result: 8.000000
```

Solution

```

// www.gammal.tech

#include <stdio.h>

int main() {
    double base, exponent, result = 1;
    printf("Enter base: ");
    scanf("%lf", &base);
    printf("Enter exponent: ");
    scanf("%lf", &exponent);

    for (int i = 0; i < exponent; i++) {
        result *= base;
    }

    printf("Result: %lf\n", result);

    return 0;
}
```

7- Calculate the factorial of a number

حساب مضروب الرقم

Input

```
Enter a non-negative integer: 5
```

Output

```
Factorial: 120
```

Solution

```
// www.gammal.tech

#include <stdio.h>

int main() {
    int num;
    printf("Enter a non-negative integer: ");
    scanf("%d", &num);

    int result = 1;

    for (int i = 1; i <= num; i++) {
        result *= i;
    }

    printf("Factorial: %d\n", result);

    return 0;
}
```

8- Calculate the sum of digits in a number

حساب مجموع الأرقام في الرقم

Input

```
Enter a positive integer: 123
```

Output

```
Sum of digits: 6
```

Solution

```
// www.gammal.tech

#include <stdio.h>

int main() {
    int num, sum = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &num);

    while (num != 0) {
        sum += num % 10;
        num /= 10;
    }

    printf("Sum of digits: %d\n", sum);

    return 0;
}
```

9- Write a program that prompts the user to enter a positive integer, calculates the number of digits in the entered integer, and then displays the result.

اكتب برنامجًا يطلب من المستخدم إدخال عدد صحيح موجب، ويحسب عدد الأرقام في العدد الصحيح الذي تم إدخاله، ثم يعرض النتيجة.

Input

```
Enter a positive integer: 1234
```

Output

```
Number of digits: 4
```

Solution

```
// www.gammal.tech
#include <stdio.h>

int main() {
    int num, counter = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &num);

    // Count the number of digits using a loop
    while (num != 0) {
        num /= 10;
        counter++;
    }

    // Display the result
    printf("\nNumber of digits: %d\n", counter);

    return 0;
}
```

10- Write a program that prompts the user to enter a positive integer, calculates both the number of digits and the sum of its digits, and then displays the results.

اكتب برنامجًا يطلب من المستخدم إدخال عدد صحيح موجب، ويحسب كلاً من عدد الأرقام ومجموع أرقامها، ثم يعرض النتائج.

Input

```
Enter a positive integer: 12345
```

Output

```
Number of digits: 5  
Sum of digits: 15
```

Solution

```
// www.gammal.tech  
  
#include <stdio.h>  
  
int main() {  
    int num, sum = 0, counter = 0;  
    printf("Enter a positive integer: ");  
    scanf("%d", &num);  
  
    // Count the number of digits and calculate the sum using a loop  
    while (num != 0) {  
        sum += num % 10;  
        num /= 10;  
        counter++;  
    }  
  
    // Display the results  
    printf("\nNumber of digits: %d\n", counter);  
    printf("Sum of digits: %d\n", sum);  
  
    return 0;  
}
```