

# Exercises

- 1) Write a function to find the factorial of a number.
- 2) Write a function to check if a number is a perfect square.
- 3) Write a function to find the square root of a number.
- 4) Write a function to find the cube root of a number.
- 5) Write a function to check if a number is a palindrome.
- 6) Write a function to convert a string to title case.
- 7) Write a function to find the length of the hypotenuse of a right-angled triangle.
- 8) Write a function to calculate the distance between two points.
- 9) Write a function to calculate the slope of a line.
- 10) Write a function to find the midpoint of a line.

# Exercises and solution

1) Write a function to find the factorial of a number.

```
def factorial(n):  
    if n == 0:  
        return 1  
    else:  
        return n * factorial(n-1)
```

2) Write a function to check if a number is a perfect square.

```
def is_perfect_square(n):  
    root = int(n ** 0.5)  
    return root ** 2 == n
```

3) Write a function to find the square root of a number.

```
def square_root(n):  
    return n ** 0.5
```

4) Write a function to find the cube root of a number.

```
def cube_root(n):  
    return n ** (1/3)
```

5) Write a function to check if a number is a palindrome.

```
def is_palindrome(n):  
    return str(n) == str(n)[::-1]
```

6) Write a function to convert a string to title case.

```
def title_case(s):  
    return s.title()
```

7) Write a function to find the length of the hypotenuse of a right-angled triangle.

```
def hypotenuse(a, b):  
    return (a ** 2 + b ** 2) ** 0.5
```

8) Write a function to calculate the distance between two points.

```
def distance(x1, y1, x2, y2):  
    return ((x2 - x1) ** 2 + (y2 - y1) ** 2) ** 0.5
```

9) Write a function to calculate the slope of a line.

```
def slope(x1, y1, x2, y2):  
    return (y2 - y1) / (x2 - x1)
```

10) Write a function to find the midpoint of a line.

```
def midpoint(x1, y1, x2, y2):  
    return ((x1 + x2) / 2, (y1 + y2) / 2)
```