

Exercises

- 1) Write a function to calculate the volume of a cube.
- 2) Write a function to calculate the volume of a sphere.
- 3) Write a function to calculate the volume of a cylinder.
- 4) Write a function to calculate the area of a triangle.
- 5) Write a function to calculate the area of a trapezium.
- 6) Write a function to calculate the area of a parallelogram.
- 7) Write a function to calculate the perimeter of a triangle.
- 8) Write a function to calculate the perimeter of a trapezium.
- 9) Write a function to calculate the perimeter of a parallelogram.
- 10) Write a function to find the roots of a quadratic equation.

Exercises and solution

- 1) Write a function to calculate the volume of a cube.

```
def cube_volume(side):  
    volume = side ** 3  
    return volume
```

- 2) Write a function to calculate the volume of a sphere.

```
import math  
  
def sphere_volume(radius):  
    volume = (4/3) * math.pi * (radius ** 3)  
    return volume
```

- 3) Write a function to calculate the volume of a cylinder.

```
import math  
  
def cylinder_volume(radius, height):  
    volume = math.pi * (radius ** 2) * height  
    return volume
```

- 4) Write a function to calculate the area of a triangle.

```
def triangle_area(base, height):  
    area = 0.5 * base * height  
    return area
```

5) Write a function to calculate the area of a trapezium.

```
def trapezium_area(base1, base2, height):  
    area = 0.5 * (base1 + base2) * height  
    return area
```

6) Write a function to calculate the area of a parallelogram.

```
def parallelogram_area(base, height):  
    area = base * height  
    return area
```

7) Write a function to calculate the perimeter of a triangle.

```
def triangle_perimeter(side1, side2, side3):  
    perimeter = side1 + side2 + side3  
    return perimeter
```

8) Write a function to calculate the perimeter of a trapezium.

```
def trapezium_perimeter(side1, side2, side3, side4):  
    perimeter = side1 + side2 + side3 + side4  
    return perimeter
```

9) Write a function to calculate the perimeter of a parallelogram.

```
def parallelogram_perimeter(side1, side2):  
    perimeter = 2 * (side1 + side2)  
    return perimeter
```

10) Write a function to find the roots of a quadratic equation.

```
import cmath  
  
def quadratic_roots(a, b, c):  
    delta = (b ** 2) - (4 * a * c)  
    root1 = (-b - cmath.sqrt(delta)) / (2 * a)
```

```
root2 = (-b + cmath.sqrt(delta)) / (2 * a)
return root1, root2
```