Functions

Table of Contents

Ex. 1: <u>Basic function</u>

```
for n = 1:5
 x = n * 0.1;
 z = function1(x);
 fprintf('x = %4.2f f(x) = %8.4f \r',x,z)
end
```

```
x = 0.10 f(x) =    7.3200
x = 0.20 f(x) =    7.6800
x = 0.30 f(x) =    8.0800
x = 0.40 f(x) =    8.5200
x = 0.50 f(x) =    9.0000
```

Ex. 2: <u>Function with multiple input parameters</u>

```
for n = 1:5
 x = n * 0.1;
 z = function2(x,2,3,7);
 fprintf('x = %4.2f f(x) = %8.4f \r', x, z)
end
```

```
x = 0.10 f(x) =    7.3200
x = 0.20 f(x) =    7.6800
x = 0.30 f(x) =    8.0800
x = 0.40 f(x) =    8.5200
x = 0.50 f(x) =    9.0000
```

Ex. 3: <u>Application:</u> Finding the roots of a quadratic

```
function3(2,4,-4) % (2 * x^2) + (4 * x) - 4 = 0
```

```
OK: roots are real and distinct
ans = 1×2
   -2.7321    0.7321
```

```
function3(1,2,1) % (1 * x^2) + (2 * x) - 1 = 0
```

```
discriminant is zero, roots are repeated
ans = 1×2
    -1    -1
```

```
function3(4,1,1) % (4 * x^2) + (1 * x) + 1 = 0
```

```
OK: roots are real and distinct
ans = 1×2 complex
  -0.1250 - 0.4841i  -0.1250 + 0.4841i
```