# Basics

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## Ex. 1: Write your first Matlab program

```
a = 3;
b = 5;
c = a + b;
```

## Ex. 2: The meaning of "a = b"

```
a = 3;
b = a;
b;
```

## Ex. 3: Basic math operations

```
a = 3;
b = 9;
c = (2 * a) + b^2 - (a * b) + ((b / a) - 10);
```

## Ex. 4: Working with arrays

```
a = [3 6 7];
b = [1 9 4];
c = a + b;
```

## Ex. 5: Extracting an individual element of an array

```
a = [3 6 7];
b = [1 9 4 5];
c = a(2) + b(4);
```

## Ex. 6: Comment

```
%
% This program demonstrates how to "comment out"
% a segment of code
%
A = 3;
B = A * A;
%
```

```
% B = 2*B <--- This statement is not executed
%
C = A + B;
```

### Ex. 8: "Clear" a variable

```
c1 = 3;
c2 = c1 + 5;
% clear c1;
c1;
```

### Ex. 9: Intrinsic math functions and constants

```
x = pi;
y = sin(pi / 2);
z = exp(-sin(pi / 2));
```

### Ex. 10: Introduction to graphics

```
x = [0:0.1:20]; % start from 0, increment by 0.1 each iteration, stop at 20
y = sin(x);
plot(x,y);
```

### Ex. 11: Formatting output

```
a = 3;
b = a * a;
c = a * a * a;
d = sqrt(a);

fprintf('%4u square equals %4u \r', a, b);
fprintf('%4u cube equals %4u \r', a, c);
fprintf('The square root of %2u is %6.4f \r', a, d);
```