A variable is a storage location with a name.

Use the **double** type for floatingpoint

When declaring a variable, you usually want to **initialize** it

a variable in Java stores data of a specific **type**

numbersa value such as 6 or 0.335 occurs in a Java program, it is called a **number literal**.

Variable names must start with a letter or the underscore (\_), it can’t start with number

You cannot use other symbols such as ? or %. Spaces are not permitted inside names either

Variable names are **case sensitive**

You cannot use **reserved words** such as *double* or class as names

You use the **assignment statement** to place a new value into a variable, The left-hand side of an assignment statement consists of a variable. The right-hand side is an expression that has a value.

The assignment operator = does not denote mathematical equality.

a variable is defined with the reserved word *final*, its value can never change

The % operator computes the remainder of an integer division

You use a cast (*typeName*) to convert a value to a different type

When a program asks for user input, it should first print a message that tells the user which input is expected. Such a message is called a **prompt**.

To read keyboard input, you use a class called *Scanner*. You obtain a Scanner object by using the following statement:

Scanner in = new Scanner(System.in);

The *System* class belongs to the package *java.lang*. The *Scanner* class belongs to the package *java.util*.

Java classes are grouped into packages. use the *import* statement to use classes from packages

import java.util.Scanner;

Use the *printf* method to specify how values should be formatted.

The *printf* method, does not start a new line after the output

The construct *%10.2f* is called a format specifier, *d* for an integer and *s* for a string

Pick concrete values for a typical situation to use in a hand calculation

A **string** is a sequence of characters

The *length* method yields the number of characters in a string.

A string of length 0 is called the empty string. It contains no characters and is written as “”.

Use the + operator to concatenate strings; that is, to put them together to yield a longer string.

Whenever one of the arguments of the + operator is a string, the other argument is converted to a string.

The sequence \" is called an **escape sequence**.

\n, which denotes a **newline** character

a **character** is a value of the type char. Characters have numeric values

The *charAt* method returns a *char* value from a string

Use the substring method to extract a part of a string

The method call : str.substring(start, pastEnd)