Lesson 1.4 Constants and Other Math Operations

Examples:

- **`QUARTER_VALUE`** could be established to hold the value of a quarter, **`0.25`**.
- **`INTEREST_RATE`** could be set to store the value **`0.10`** (for a rate of ten percent).
- **`COMPANY_NAME`** could be set to the **`String`** value **`"LENOVO"`**.

To declare a constant value, one typically declares and instantiates the constant near the top of the program like this:

In Java, although the syntax of Java doesn't absolutely required it, we follow a number of conventions that have developed among Java programmers over time.

For **constants** we will use the following convention:

Other Math Operations

Use of these math operations requires importing the **`java.lang.Math`** library.

```
x * x           // squaring (fast)
```

```
Math.pow(x,n)   // raising x to any power n
```

```
Math.sqrt(x)    // square root of x
```

```
Math.sin(x)     // sin of x, where x is expressed in radians
```

```
Math.cos(x)
```

```
Math.tan(x)
```

```
Math.asin(x)    // arcsin, inverse sin, of x, where results is given in radians
```

```
Math.toRadians(x)  // converts x from a value in degrees to radians
```

```
Math.toDegrees(x)  // converts x from a value in radians to degrees
```

```
Math.exp(x)     // e^x
```

```
Math.log(x)     // the natural log, ln
```

```
Math.round(x)   // rounds to nearest integer
```

```
Math.abs(x)     // yields the absolute value of x
```

```
Math.max(x,y)   // returns the maximum of the two values
```

```
Math.min(x,y)   // returns the minimum of the two values
```