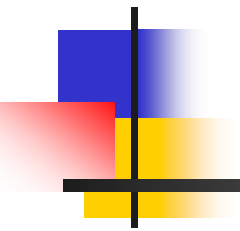
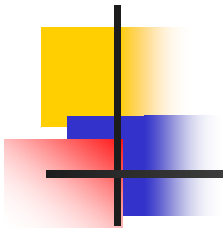


Math Class



- The `Math` Class

- The **`Math`** class provides a number of standard mathematical methods
  - It is found in the **`java.lang`** package and it does not require an **`import`** statement
  - All of its methods and data are static, therefore they are invoked with the class name **`Math`** instead of a calling object
  - The **`Math`** class has two predefined constants, **`E`** (*e*, the base of the natural logarithm system) and **`PI`** (π, 3.1415 . . .)

```
area = Math.PI * radius * radius;
```

-- Some Methods in the Class `Math` …

Display 5.6 Some Methods in the Class `Math`

The `Math` class is in the `java.lang` package, so it requires no `import` statement.

```
public static double pow(double base, double exponent)
```

Returns `base` to the power `exponent`.

EXAMPLE

`Math.pow(2.0,3.0)` returns `8.0`.

(continued)

… -- Some Methods in the Class `Math` …

Display 5.6 **Some Methods in the Class `Math`**

```
public static double abs(double argument)
public static float abs(float argument)
public static long abs(long argument)
public static int abs(int argument)
```

Returns the absolute value of the `argument`. (The method name `abs` is overloaded to produce four similar methods.)

EXAMPLE

`Math.abs(-6)` and `Math.abs(6)` both return 6. `Math.abs(-5.5)` and `Math.abs(5.5)` both return `5.5`.

```
public static double min(double n1, double n2)
public static float min(float n1, float n2)
public static long min(long n1, long n2)
public static int min(int n1, int n2)
```

Returns the minimum of the arguments `n1` and `n2`. (The method name `min` is overloaded to produce four similar methods.)

EXAMPLE

`Math.min(3, 2)` returns 2.

(continued)

… -- Some Methods in the Class `Math` …

Display 5.6 Some Methods in the Class `Math`

```
public static double max(double n1, double n2)
public static float max(float n1, float n2)
public static long max(long n1, long n2)
public static int max(int n1, int n2)
```

Returns the maximum of the arguments n1 and n2. (The method name max is overloaded to produce four similar methods.)

EXAMPLE

`Math.max(3, 2)` returns 3.

```
public static long round(double argument)
public static int round(float argument)
```

Rounds its `argument`.

EXAMPLE

`Math.round(3.2)` returns 3; `Math.round(3.6)` returns 4.

(continued)

… -- Some Methods in the Class **`Math`** …

Display 5.6 Some Methods in the Class `Math`

```
public static double ceil(double argument)
```

Returns the smallest whole number greater than or equal to the argument.

EXAMPLE

`Math.ceil(3.2)` and `Math.ceil(3.9)` both return `4.0`.

(continued)

... -- Some Methods in the Class `Math`

Display 5.6 Some Methods in the Class `Math`

```
public static double floor(double argument)
```

Returns the largest whole number less than or equal to the `argument`.

EXAMPLE

`Math.floor(3.2)` and `Math.floor(3.9)` both return `3.0`.

```
public static double sqrt(double argument)
```

Returns the square root of its `argument`.

EXAMPLE

`Math.sqrt(4)` returns `2.0`.

THE END