

Worksheet 9

The Distance Formula

Distance formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

d = distance

(x_1, y_1) = coordinates of the first point

(x_2, y_2) = coordinates of the second point

Create a program which asks the user for two ordered pairs in the x-y axis. Calculate and display the distance between these two points.

Remember to import the Scanner and Math libraries.

```
import java.util.Scanner;
```

```
import java.lang.Math;
```

Make your program output EXACTLY as shown in the sample session below.

Sample Session

```
Finding the distance between two ordered pairs
Enter the x-coordinate for the first point (e.g. 0) > 0
Enter the y-coordinate for the first point (e.g. 0) > 0
Enter the x-coordinate for the second point (e.g. 1) > 1
Enter the y-coordinate for the second point (e.g. 1) > 1
You entered these two points: (0.0,0.0) and (1.0,1.0)

the distance between the two points is: 1.4142135623730951
```

```
Finding the distance between two ordered pairs
Enter the x-coordinate for the first point (e.g. 0) > 4
Enter the y-coordinate for the first point (e.g. 0) > 4
Enter the x-coordinate for the second point (e.g. 1) > 4
Enter the y-coordinate for the second point (e.g. 1) > 4
You entered these two points: (4.0,4.0) and (4.0,4.0)

the distance between the two points is: 0.0
```

You'll need to use:

```
Math.sqrt( 9 );    //which yields 3.0
Math.pow( 10, 3);  //which yields 1000.0
```