

# Slope Calculator Documentation

Slope Calculator calculates the slope of a line. The user provides the (x,y) coordinates for the line's two endpoints, and the program displays the line's slope, measured in degrees relative to the x-axis.

## Running Slope Calculator

The command-line syntax for running Slope Calculator is as follows:

```
java -cp . SlopeCalculator x1 y1 x2 y2
```

(x1, y1) and (x2, y2) are the line's endpoints. All values must be integers in the range [-1000000000, 1000000000] (negative one billion to positive one billion, inclusive).

The output is the slope of the line relative to the x-axis, rounded to the nearest degree. For example,

```
$ java -cp . SlopeCalculator 0 0 5 5  
45 degrees
```

```
$ java -cp . SlopeCalculator -1 1 1 -1  
-45 degrees
```

The slope of a line does not depend on the order in which the endpoints are given. The same slope will result regardless of the order of the endpoints. For example,

```
$ java -cp . SlopeCalculator 2 5 19 4  
-3 degrees
```

```
$ java -cp . SlopeCalculator 19 4 2 5  
-3 degrees
```

The slope a line will be an integer value in the range (-90, 90]. Horizontal lines have a slope of zero. Vertical lines have a slope of 90. Lines for which both endpoints are the same have an undefined slope. Lines that tend upward when moving left-to-right have a positive slope in the range (0, 90). Lines that tend downward when moving left-to-right have a negative slope in the range (-90, 0). The following diagram depicts the various cases:

