

Homework

Grade 11 Review 5 – Methods

Part 1

Write a class `Line.java` to calculate the different property of a line.
The class should include the following methods

1. `length` – takes the coordinates of a line segment as input and returns its
`length`

```
public static double length (int x1, int y1, int x2, int y2)
```
2. `slope` – takes the coordinates of a line segment as input and returns its
`slope`

```
public static double slope (int x1, int y1, int x2, int y2)
```

Hint:

The formula for calculating length of a line is $\sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

The formula for calculating slope of a line is $\frac{(y_2 - y_1)}{(x_2 - x_1)}$

Use `Math.sqrt(num)` to find the square root of a number

Part 2

Write a class `CheckLine.java` with the `main` methods which asks users for coordinates of two lines, then uses the methods in `Line.java` to check if the lines have the same length, and if the lines are parallel or perpendicular.

Here is a sample run:

```
Please enter the two coordinates of line 1:
```

```
Vertex 1 x-value:    0
```

```
Vertex 1 y-value:    0
```

```
Vertex 2 x-value:    1
```

```
Vertex 2 y-value:    1
```

```
Please enter the two coordinates of line 2:
```

```
Vertex 1 x-value:    2
```

```
Vertex 1 y-value:    2
```

```
Vertex 2 x-value:    4
```

```
Vertex 2 y-value:    4
```

Results:

The two lines do not have the same length.

The two lines are parallel.