Word Problem: distance

Directions: *Write a function distance, which takes FOUR inputs:*

- *px: The x-coordinate of the player*
- *py: The y-coordinate of the player*
- *cx: the x-coordinate of another game character*
- *cy: the y-coordinate of another game character*

It should return the distance between the two, using the Distance formula. (HINT: look at what you did on the previous page!)

Contract and Purpose Statement

Every contract has three parts...

```
;    distance    :    number  number  number  number    →    number
```

function name | *domain* | *range*

```
;  Produce  distance  between  two  points  with  given  coordinates
```

what does the function do?

Examples

Write some examples, then circle and label what changes...

```
(EXAMPLE(    distance      0  0  3  4    )
```

function name | *input(s)*

```
(sqrt  (+  (sq  (line-length  3  0))  (sq  (line-length  4  0))))
```

what the function produces

```
(EXAMPLE(    distance     10  20  13  24  )
```

function name | *input(s)*

```
(sqrt  (+  (sq  (line-length  13  10))  (sq  (line-length  24  20)))))
```

what the function produces

Definition

Write the definition, given variable names to all your input values...

```
(define(    distance     px  py  cx  cy  )
```

function name | *variables*

```
(sqrt  (+  (sqr  (line-length  px  cx))  (sqr  (line-length  py  cy))))
```

what the function does with those variables