Word Problem: distance

Directions: Use the Design Recipe to write a function `distance`, which takes in FOUR inputs: `px` and `py` (the x- and y-coordinate of the Player) and `cx` and `cy` (the x- and y-coordinates of another character). coordinates of two objects and produces the distance between them in pixels.

Contract and Purpose Statement

Every contract has three parts…

```
; distance : Number Number Number Number -> Number
```

function name / *domain* / *range*

```
; Takes in two sets of (x,y) coordinates and produces the distance between them
```

what does the function do?

Examples

Write some examples, then circle and label what changes…

```
(EXAMPLE (distance 0 4 3 0) (sqrt (+ (sqr (- 4 0)) (sqr (- 0 3)))))
(EXAMPLE (distance 1 30 32 24) (sqrt (+ (sqr (- 30 1)) (sqr (- 24 32)))))
```

function name / *input(s)* / *what the function produces*

Definition

Write the definition, giving variable names to all your input values…

```
(define (distance x1 y1 x2 y2)
  (sqrt (+ (sqr (- x2 x1)) (sqr (- y2 y1)))))
```

function name / *variable(s)* / *what the function does with those variable(s)*