FIRST RACKET PROGRAMMING ASSIGNMENT: SOLUTION
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Learning Abstract

This assignment allowed me to learn the basic functionalities of Lisp. I have never used lisp before, so it was a very good warm up. In this exercise we worked with circles and found things like the area of certain circles and working with Pi. I am now getting used to putting operations in front of the numerics instead of in between.

Interaction: Simple Numeric Processing

```
Welcome to DrRacket, version 8.2 [cs].
Language: racket, with debugging; memory limit: 128 MB.
> 5
5
> 5.3
5.3
> (*3 10)
      *3: undefined;
 cannot reference an identifier before its definition
> ( * 3 10)
30
> ( + ( * 3 10 ) 4)
34
> ( * 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 )
984770902183611232881
>
```

Interaction: Solution to the Scrap Problem

```
> pi
3.141592653589793
> side
      side: undefined;
 cannot reference an identifier before its definition
> ( define side 100 )
> side
100
> ( define square-area ( * side side ) )
> square area
      square: undefined;
 cannot reference an identifier before its definition
> square-area
10000
> ( define radius ( / side 2 ) )
> radius
50
> ( define circle-area ( * pi radius radius ) )
> circle-area
7853.981633974483
> ( define scrap-area ( - square-area circle-area ) )
> scrap-area
2146.018366025517
```

```
> ( require 2htdp/image )
> ( define side 100 )
> ( define the-square ( square side "solid" "silver" ) )
> the-square
```



```
> ( define radius ( / side 2 ) )
> ( define the-circle ( circle radius "solid" "white" ) )
> ( define the-image ( overlay the-circle the-square ) )
> the-image
```
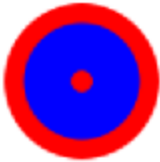


```
>
```

Interaction: Illustration of the Target Problem Situation

```
> ( require 2htdp/image )
> ( define small_circle ( circle 6 "solid" "red" ) )
> ( define medium_circle ( circle 31.5 "solid" "blue" ) )
> ( define big_circle ( circle 42 "solid" "red" ) )
> ( define circle_group ( overlay small_circle medium_circle
big_circle ) )
>   circle_group
```



```
>
```

Interaction: Solution to the target problem

```
> ( define small_radius 6 )
> ( define medium_radius 31.5 )
> ( define big_radius 42 )
> ( define small_area ( * pi small_radius small_radius ) )
> ( define medium_area ( * pi medium_radius medium_radius ) )
> ( define big_area ( * pi big_radius big_radius ) )
> ( define outerring ( - big_area medium_area ) )
> ( define red_area ( + outerring small_area ) )
> ( define percent_red ( * ( / red_area big_area ) 100 ) )
> percent_red
45.79081632653062
> |
```