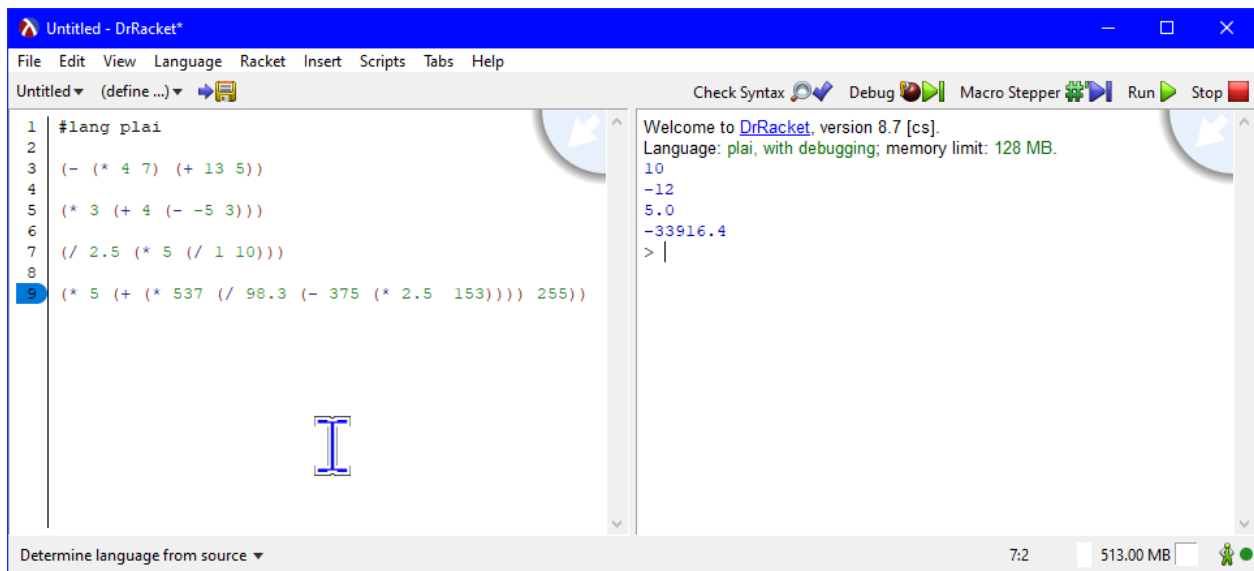


1. Transforma las siguientes expresiones aritméticas en expresiones de Racket y pruébalas en el área de interacciones. Anota el resultado de evaluar cada expresión.

- $(4 * 7) - (13 + 5)$
- $(3 * (4 + (-5 - 3)))$
- $(2.5 \div (5 * (1 \div 10)))$
- $5 * ((537 * (98.3 \div (375 - (2.5 * 153)))) + 255)$

Solución:



The screenshot shows the DrRacket IDE interface. The editor window on the left contains the following Racket code:

```
1 #lang plai
2
3 (- (* 4 7) (+ 13 5))
4
5 (* 3 (+ 4 (- -5 3)))
6
7 (/ 2.5 (* 5 (/ 1 10)))
8
9 (* 5 (+ (* 537 (/ 98.3 (- 375 (* 2.5 153)))) 255))
```

The interactions window on the right displays the results of evaluating each line of code:

```
Welcome to DrRacket, version 8.7 [cs].
Language: plai, with debugging; memory limit: 128 MB.
10
-12
5.0
-33916.4
> |
```

2. Transforma las siguientes fórmulas en expresiones de Racket y pruébalas en el área de interacciones.

- Ecuación general de segundo grado:

$$x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \text{ y } x_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

con $a = 3$, $b = 6$ y $c = 2$.

- Distancia entre dos puntos:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

con $x_1 = 5$, $x_2 = -4$, $y_1 = -3$ y $y_2 = 6$.

- Teorema de Pitágoras:

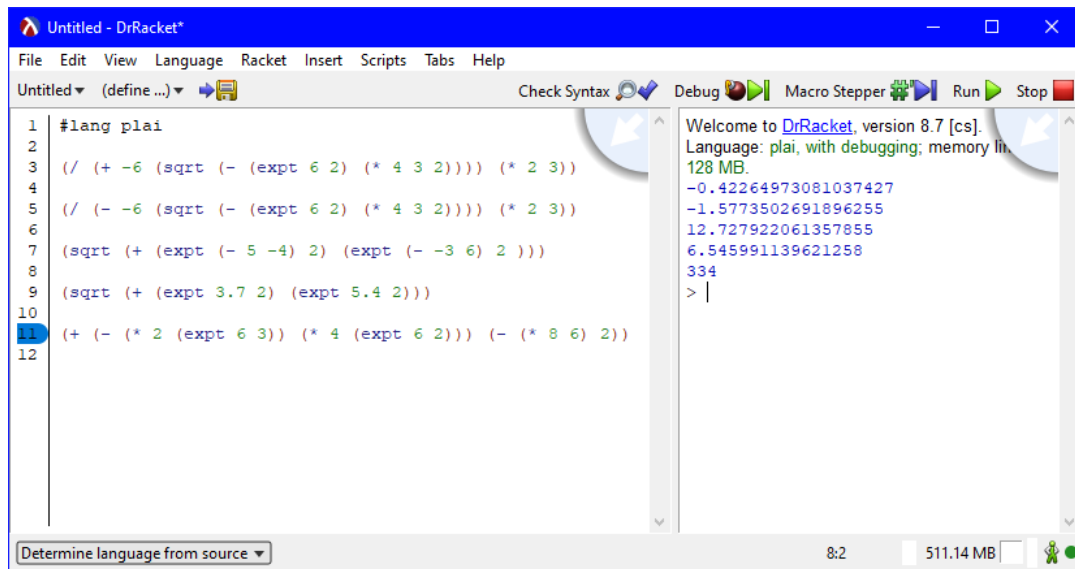
$$c = \sqrt{a^2 + b^2}$$

con $a = 3.7$ y $b = 5.4$.

- Evaluación de polinomios:

$$y = 2x^3 - 4x^2 + 8x - 2$$

con $x = 6$.

Solución:

The screenshot shows the DrRacket IDE interface. The main editor window displays a PLAI program with 12 lines of code. The code defines a language and performs several arithmetic operations using `expt`, `sqrt`, and `*` functions. The output window on the right shows the results of these operations, including a welcome message and several numerical values. The status bar at the bottom indicates the language is determined from the source and shows the current time and memory usage.

```
1 #lang plai
2
3 (/ (+ -6 (sqrt (- (expt 6 2) (* 4 3 2)))) (* 2 3))
4
5 (/ (- -6 (sqrt (- (expt 6 2) (* 4 3 2)))) (* 2 3))
6
7 (sqrt (+ (expt (- 5 -4) 2) (expt (- -3 6) 2)))
8
9 (sqrt (+ (expt 3.7 2) (expt 5.4 2)))
10
11 (+ (- (* 2 (expt 6 3)) (* 4 (expt 6 2))) (- (* 8 6) 2))
12
```

Output:

```
Welcome to DrRacket, version 8.7 [cs].
Language: plai, with debugging; memory limit: 128 MB.
-0.42264973081037427
-1.5773502691896255
12.727922061357855
6.545991139621258
334
> |
```

8:2 511.14 MB