

SICP Chapter 1

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Testing

```
(define (foo a b)
  (+ a (* 2 b)))
```

```
(foo 5 3)
```

```
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```

^ Dynamically evaluated when you press "enter" on the BEGIN_{SRC} block!

Also consider:

- `:results` output for what the code prints
- `:exports` code or `results` to just get one or the other

$a + (2 \times b)$ <~ inline Latex btw :)

Exercise 1.1

Q

Below is a sequence of expressions. What is the result printed by the interpreter in response to each expression? Assume that the sequence is to be evaluated in the order in which it is presented.

A

```
10 ;; 10
(+ 5 3 4) ;; 12
(- 9 1) ;; 8
(/ 6 2) ;; 3
(+ (* 2 4) (- 4 6)) ;; 6
(define a 3) ;; a=3
(define b (+ a 1)) ;; b=4
(+ a b (* a b)) ;; 19
```

```

(= a b) ;; false
(if (and (> b a) (< b (* a b)))
    b
    a) ;; 4
(cond ((= a 4) 6)
      ((= b 4) (+ 6 7 a))
      (else 25)) ;; 16
(+ 2 (if (> b a) b a)) ;; 6
(* (cond ((> a b) a)
        ((< a b) b)
        (else -1))
   (+ a 1)) ;; 16

```

Exercise 1.2

Q

Translate the following expression into prefix form:

$$\frac{5 + 2 + (2 - 3 - (6 + \frac{4}{5}))}{3(6 - 2)(2 - 7)} \quad (1)$$

A

```

(/ (+ 5 2 (- 2 3 (+ 6 (/ 4 5))))
   (* 3 (- 6 2) (- 2 7)))

```

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