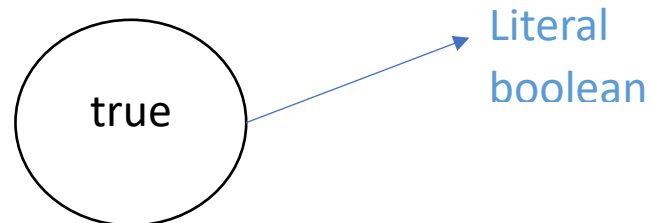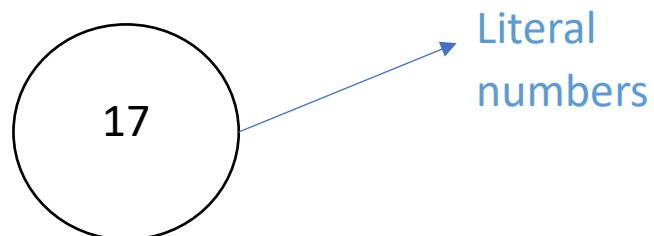FURLAN Benjamin META janvier-fevrier 2021

Exo AST Tree :

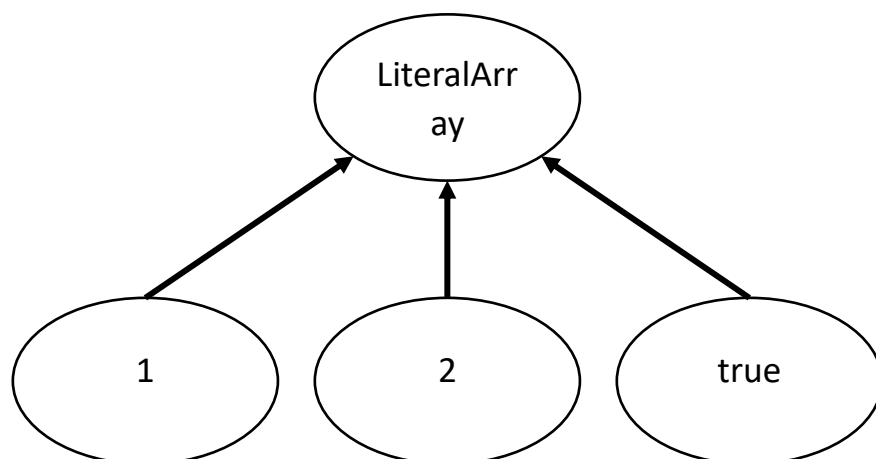Exercises on expressions.

1. Draw the AST of expression true.

2. Draw the AST of expression 17.
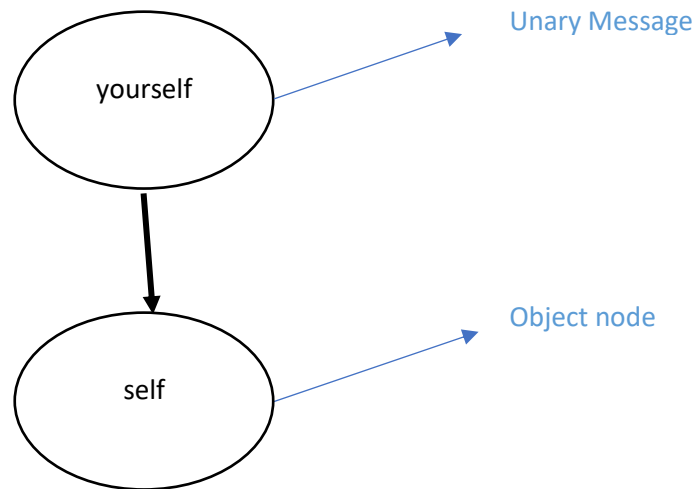

3. Draw the AST of expression #(1 2 true).

4. Draw the AST of expression self yourself.

yourself — Unary Message

self — Object node

5. Draw the AST of expression a := b := 7.

```
        :=
       /  \
      :=    7
     /  \
    a    b
```
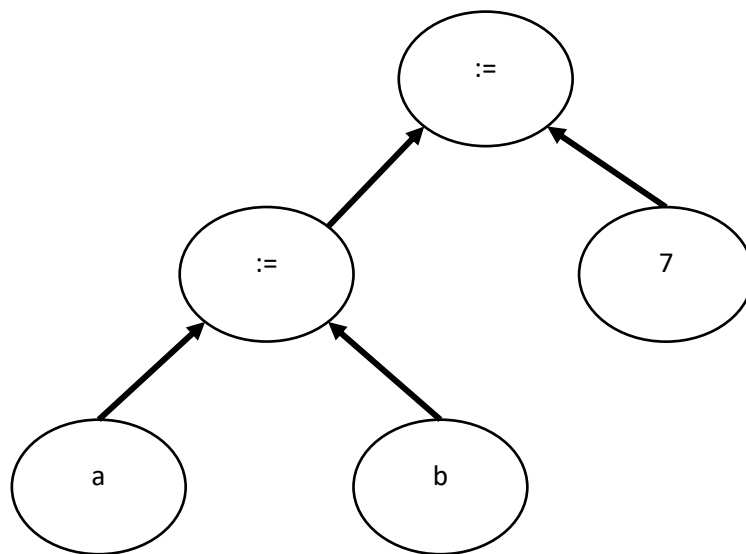
6. Draw the AST of expression a + #(1 2 3).

```
        +
       / \
      a   Literal
          Array
         / | \
        1  2  true
```
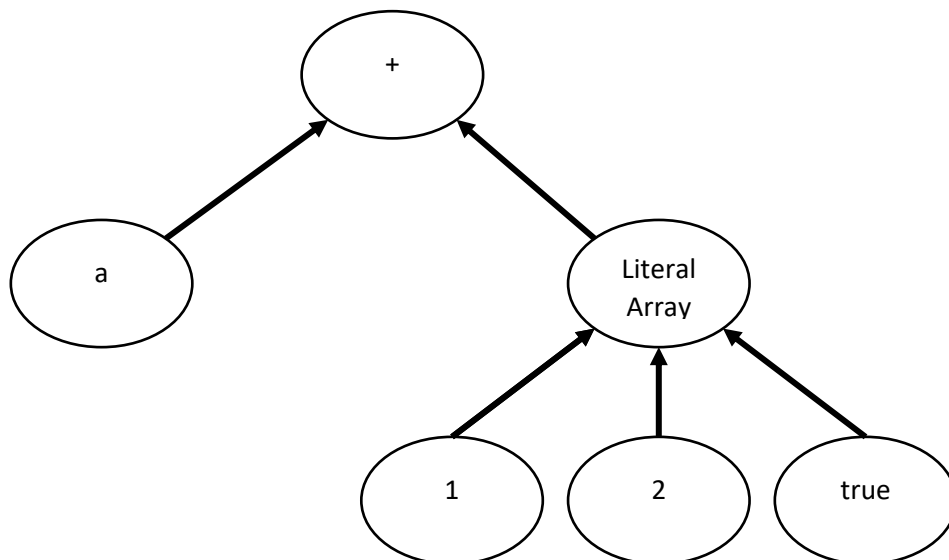
7. Draw the AST of expression a keyword: 'message'.
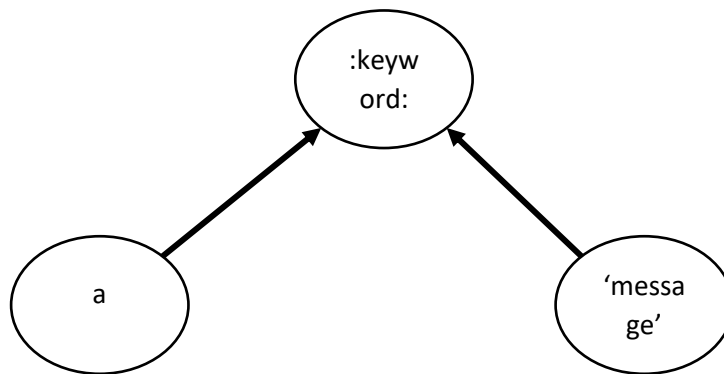
```
        :keyw
        ord:
       ↗     ↖
   a             'messa
                  ge'
```
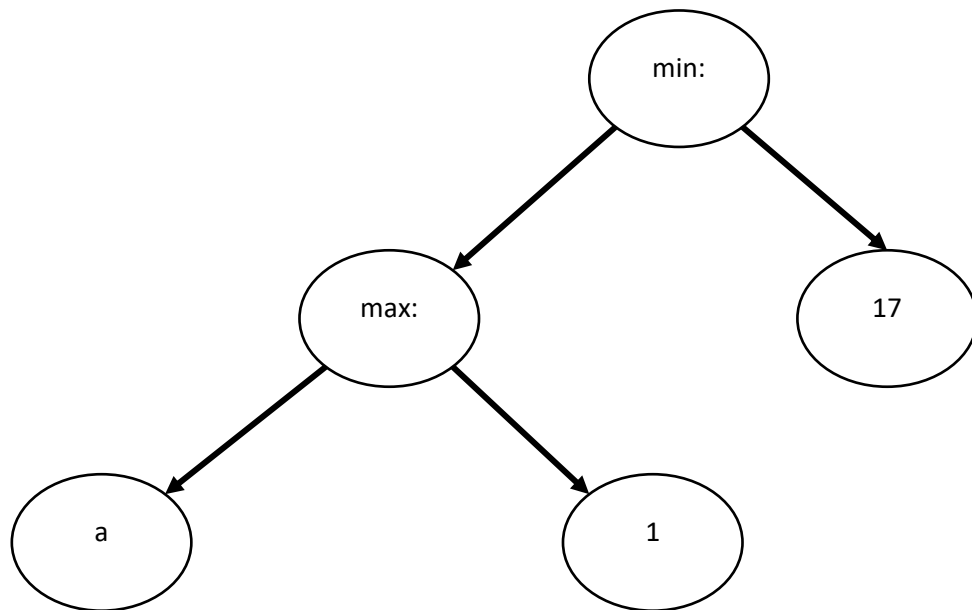
8. Draw the AST of expression (a max:1) min: 17.
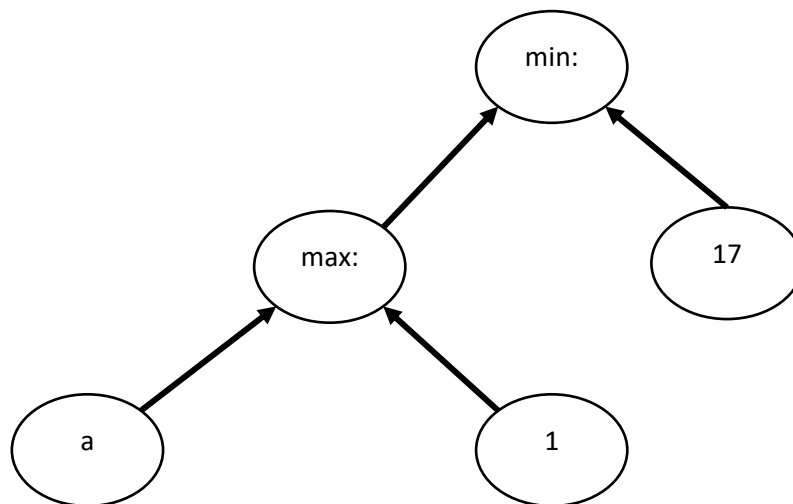
```
              min:
            ↗      ↖
       max:            17
      ↗    ↖
   a          1
```

9. Draw the AST of expression a max: 1 (min: 17)
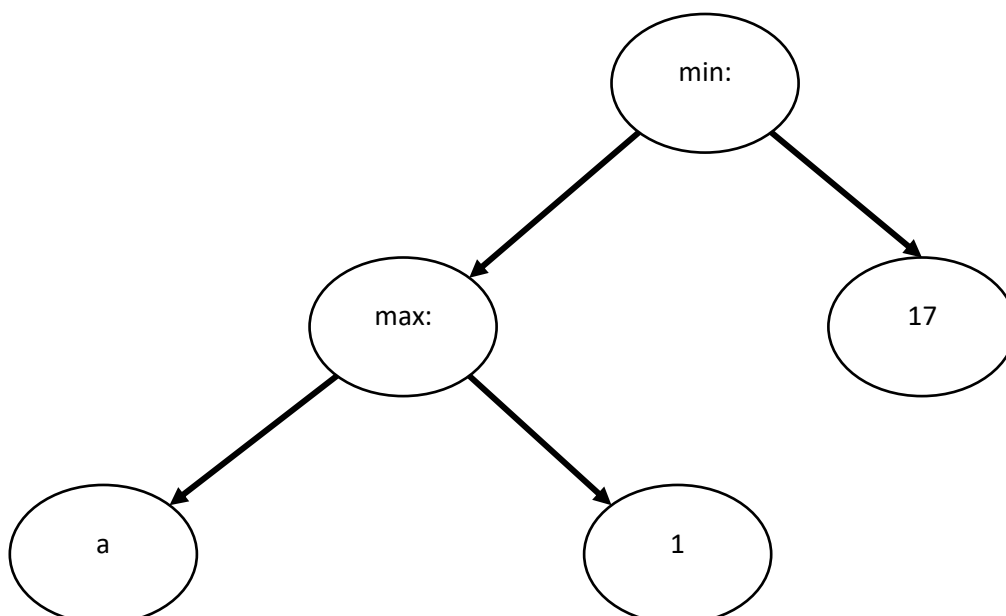
```
              min:
            ↙      ↘
       max:            17
      ↙    ↘
   a          1
```

10. Draw the AST of expression a max:1 min: 17

```
                    ┌────────┐
                    │  min:  │
                    └────────┘
                   ╱          ╲
                  ╱            ╲
           ┌────────┐       ┌────────┐
           │  max:  │       │   17   │
           └────────┘       └────────┘
          ╱          ╲
         ╱            ╲
   ┌────────┐      ┌────────┐
   │   a    │      │   1    │
   └────────┘      └────────┘
```

11. Draw the AST of expression a asParser + b asParser parse : 'some-text' , somethingElse.

```
                        ┌────────┐
                        │ parse: │
                        └────────┘
                      ╱            ╲
                     ╱              ╲
              ┌────────┐          ┌────────┐
              │   +    │          │   ,    │
              └────────┘          └────────┘
             ╱          ╲        ╱          ╲
            ╱            ╲      ╱            ╲
     ┌────────┐   ┌────────┐ ┌────────┐  ┌────────┐
     │asParse │   │asParse │ │'somet  │  │someth  │
     │   r    │   │   r    │ │ ext'   │  │ingElse │
     └────────┘   └────────┘ └────────┘  └────────┘
          │            │
     ┌────────┐   ┌────────┐
     │   a    │   │   b    │
     └────────┘   └────────┘
```
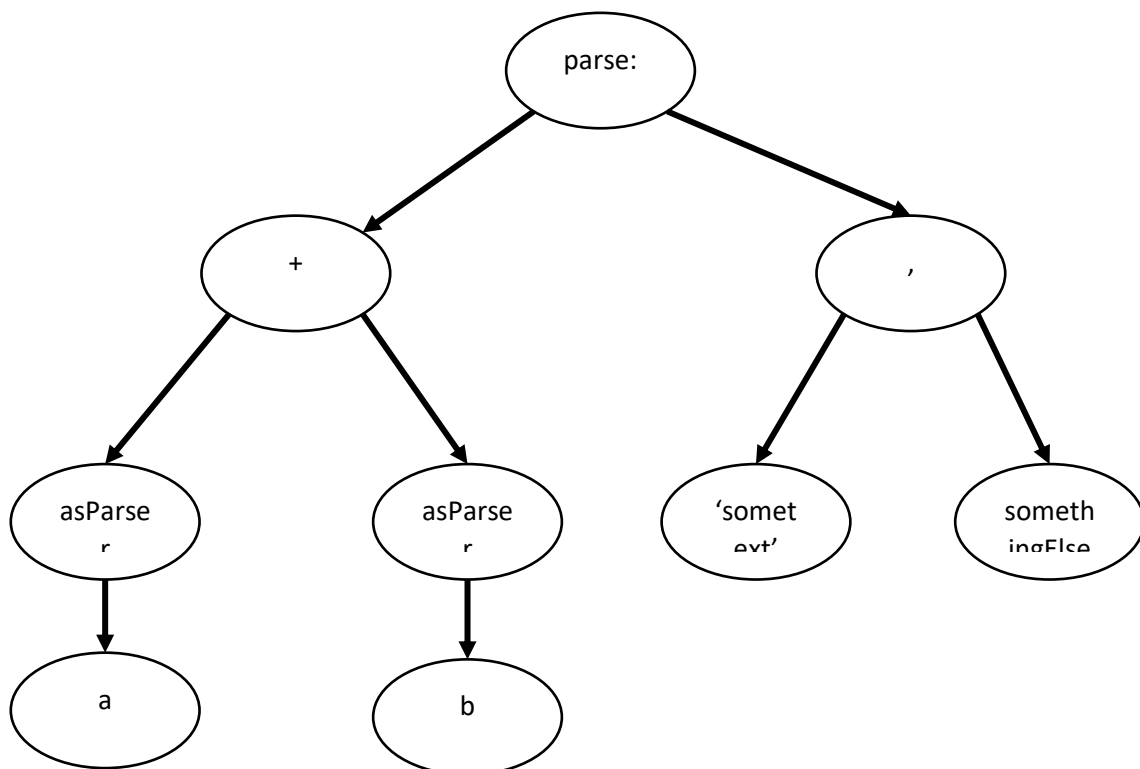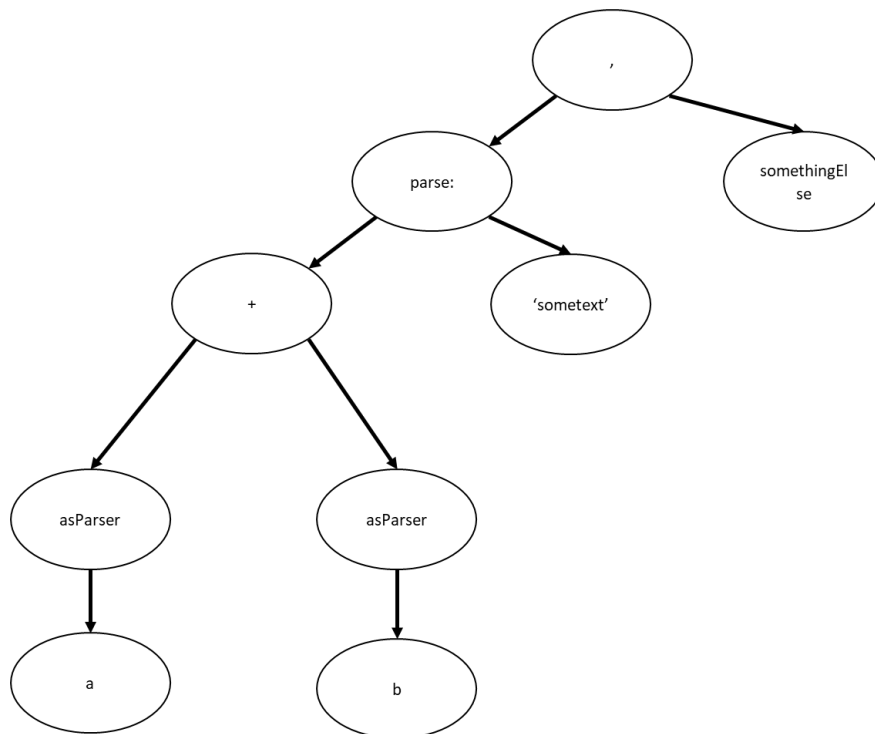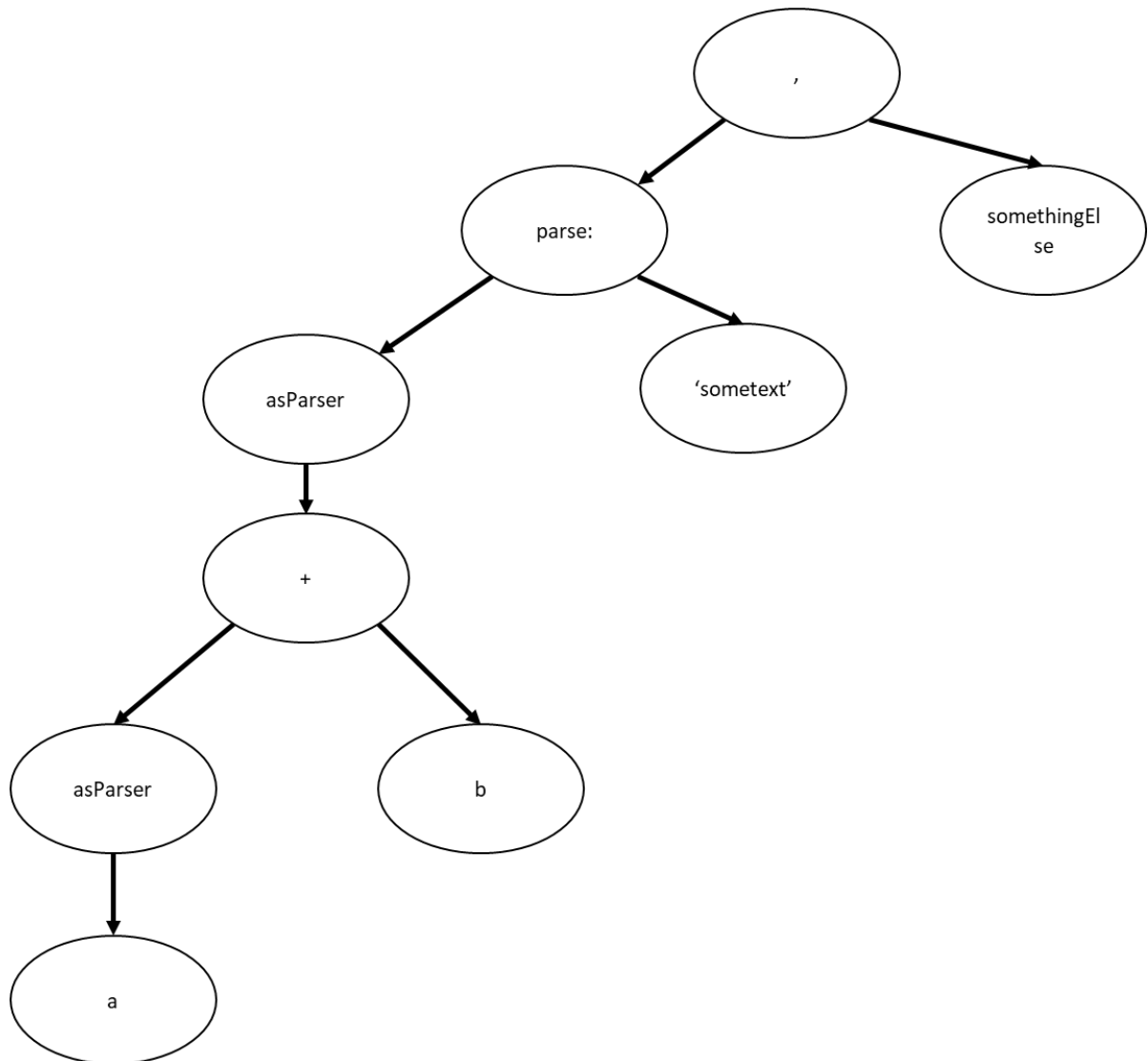
12. Draw the AST of expression (a asParser + b asParser) parse: ('sometext' , somethingElse)
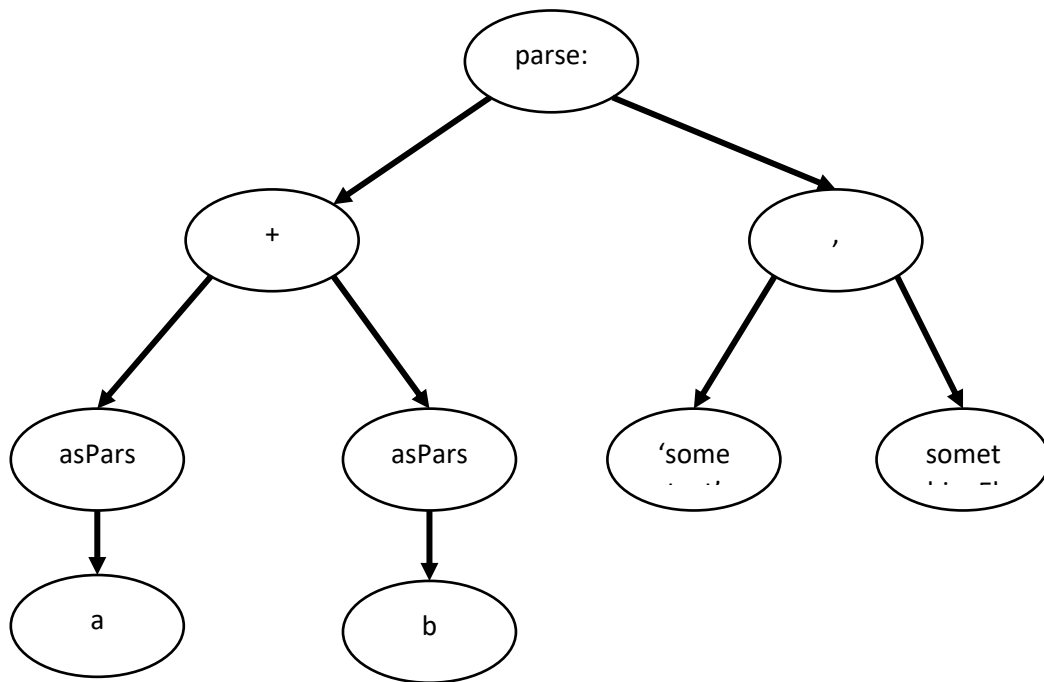
13. Draw the AST of expression (a asParser + b asParser parse : 'sometext') , somethingElse.
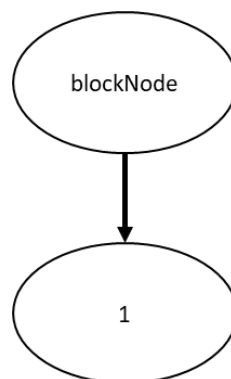
14. Draw the AST of expression ((a asParser + b) asParser parse: 'sometext') , somethingElse.
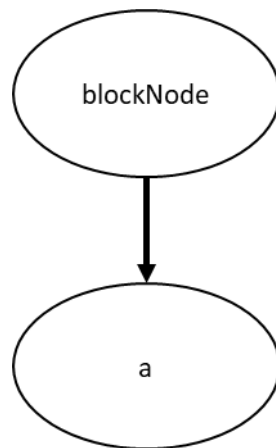
```
                              ┌─────────┐
                              │    ,    │
                              └─────────┘
                             /           \
                  ┌─────────┐             ┌──────────────┐
                  │ parse:  │             │ somethingEl  │
                  └─────────┘             │     se       │
                  /         \             └──────────────┘
         ┌──────────┐     ┌────────────┐
         │ asParser │     │ 'sometext' │
         └──────────┘     └────────────┘
               │
          ┌─────────┐
          │    +    │
          └─────────┘
          /         \
  ┌──────────┐     ┌─────┐
  │ asParser │     │  b  │
  └──────────┘     └─────┘
        │
   ┌─────────┐
   │    a    │
   └─────────┘
```

Exercises on Blocks

1. Draw the AST of block [1].

```
   ┌────────────┐
   │ blockNode  │
   └────────────┘
         │
    ┌─────────┐
    │    1    │
    └─────────┘
```

2. Draw the AST of block [: a].

```
    ┌─────────────┐
    │  blockNode  │
    └──────┬──────┘
           │
           ▼
    ┌─────────────┐
    │      a      │
    └─────────────┘
```

3. Draw the AST of block [:a | a]

```
    ┌─────────────┐
    │    Value    │
    └──────┬──────┘
           │
           ▼
    ┌─────────────┐
    │  blockNode  │
    └──────┬──────┘
           │
           ▼
    ┌─────────────┐
    │      a      │
    └─────────────┘
```
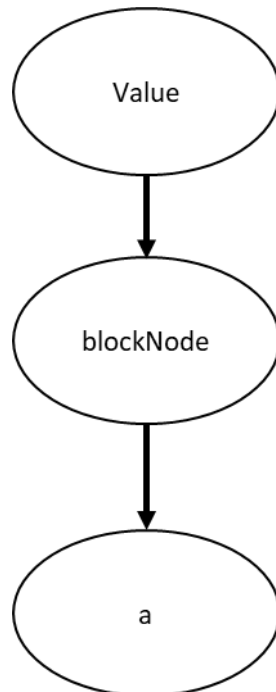
4. Draw the AST of block [:a | a + b]
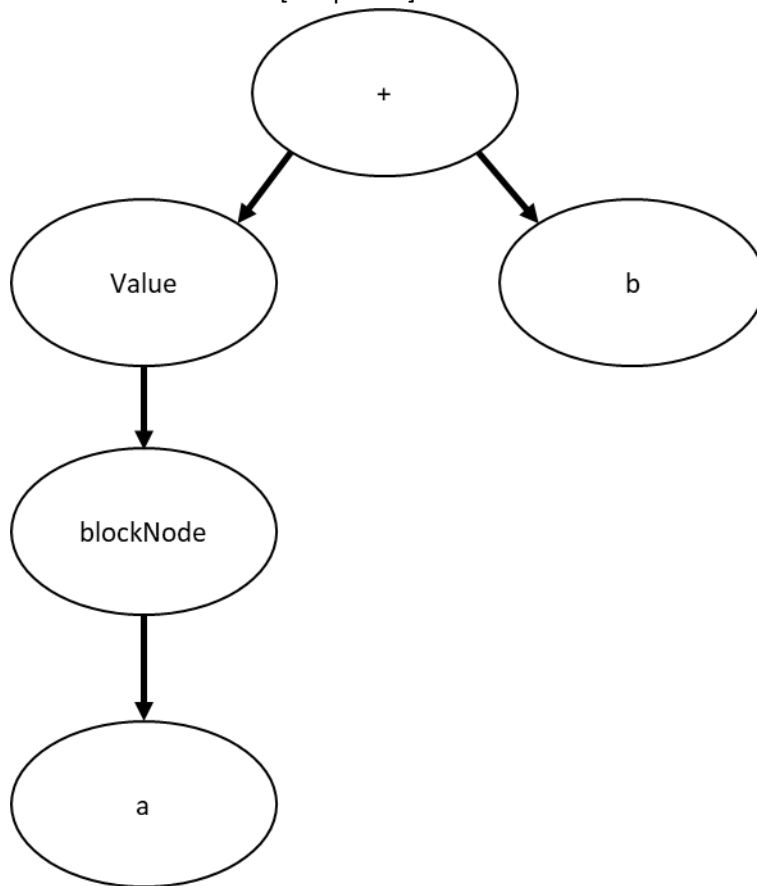
5. Draw the AST of block [:a | a + b . 7]
6. Draw the AST of block [:a | [b] . 7] .
7. Draw the AST of block [:a | |temp| [^ b] . ^ 7].