



uOttawa

CSI 3520 - Concepts des langages de programmation

AUTOMNE 2022 SECTION A

PROFESSEUR KALONJI KALALA

Devoir 1

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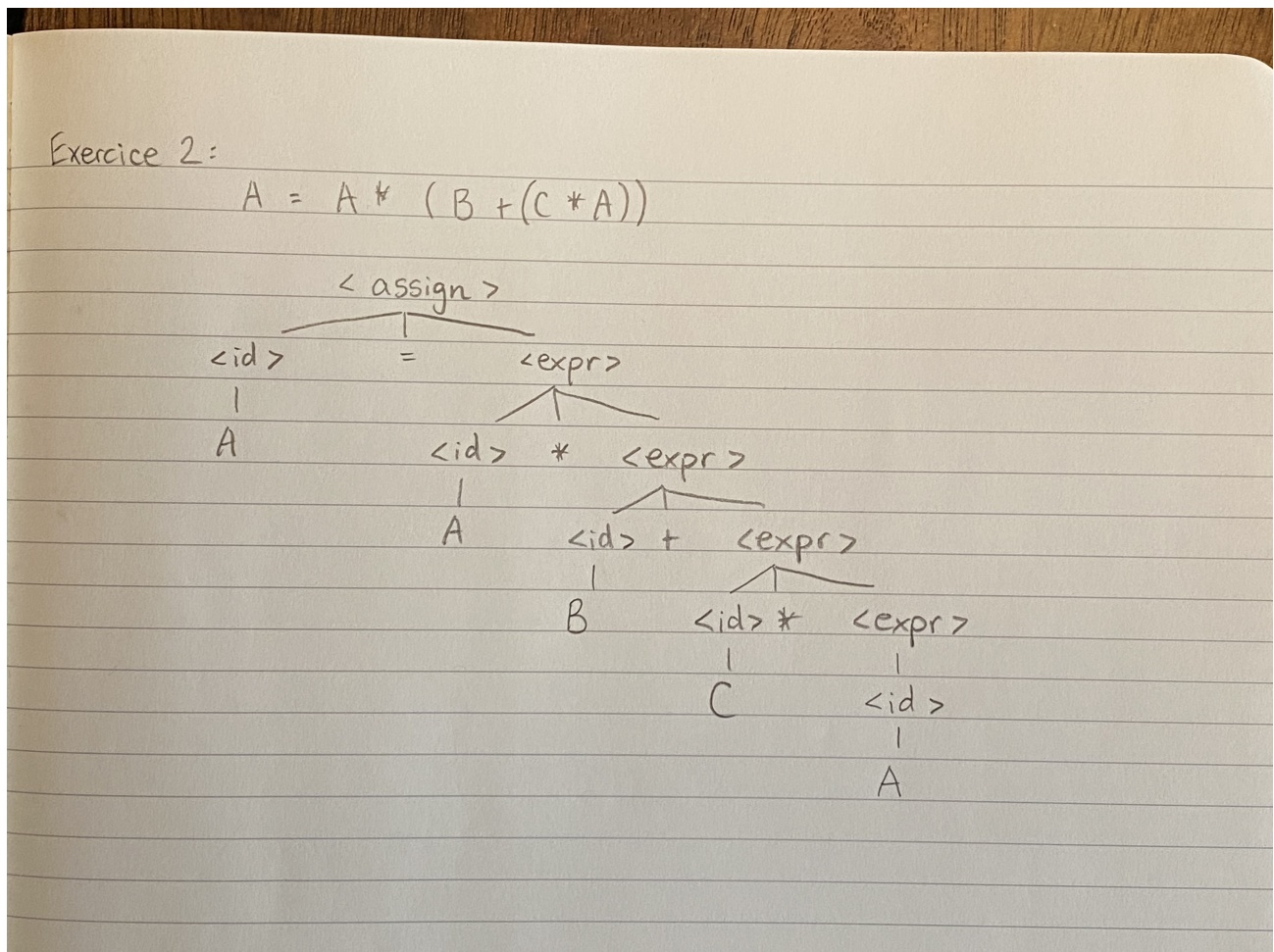
1. Réponse

```

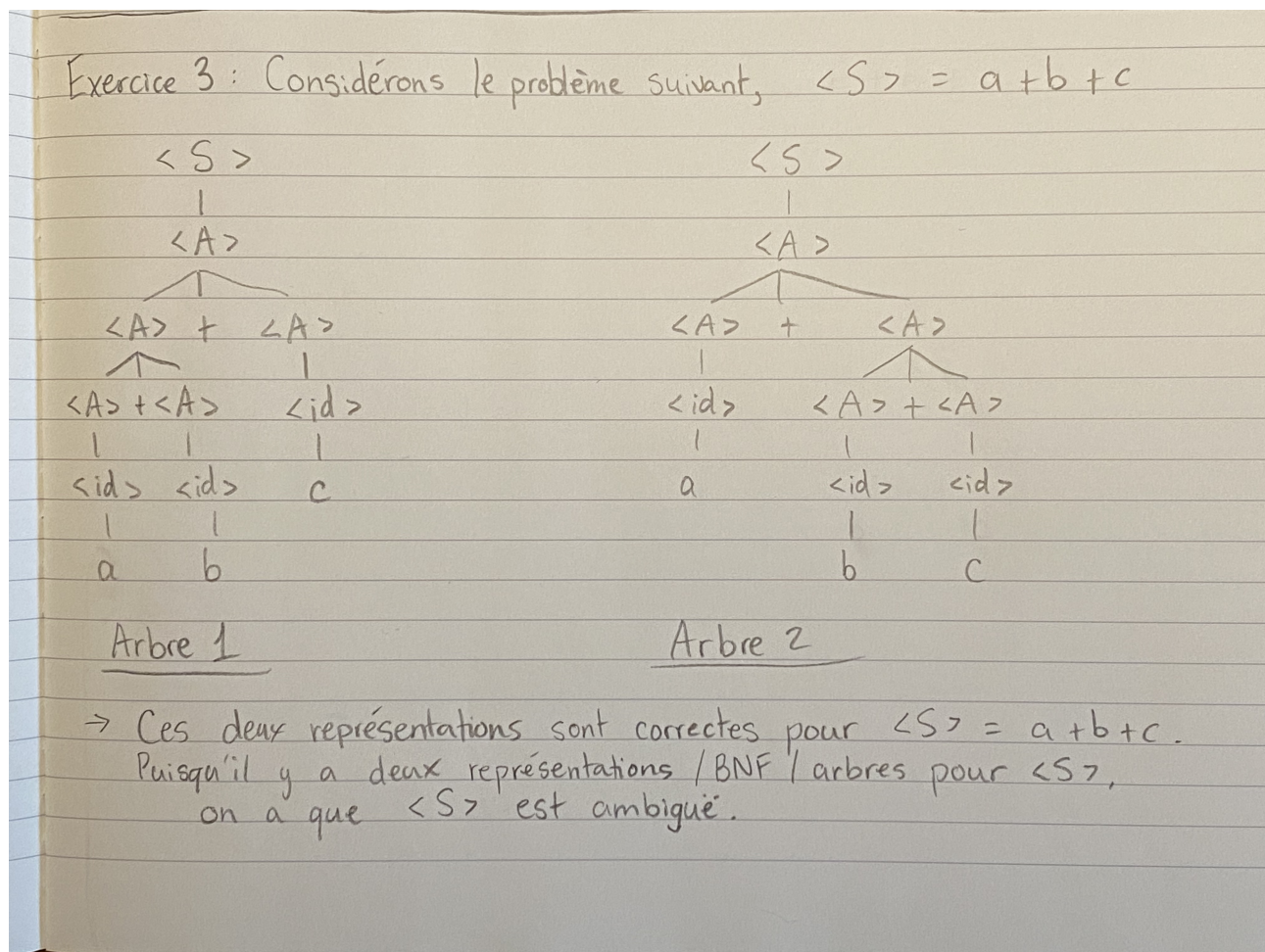
<assign> -> <id> = <expr>
<id> -> A | B | C
<expr> -> <expr> * <term>
          | <term>
<term> -> <factor> + <term>
          | <factor>
<factor> -> ( <expr> )
           | <id>

```

2. Réponse



3. Réponse



4. Réponse

```

<assign> -> <id> = <expr>
<id> -> A | B | C
<expr> -> <expr> { ( + | * ) <expr> }
          | ( <expr> )
          | <id>

```

5. Réponse

```

(a) M_r (repeat L until B)
    if M_b (B, s) = undefined | M_sl (L, s) = error
    then error
    else if M_b(B, s) = true
    then M_sl (L, s)
    else
        M_r (repeat L until B, M_sl (L, s))

```

6. Réponse

(a) Puisque

$$a = 2 * (b - 1) - 1 \quad \{a > 0\}$$

On a que,

$$a > 0$$

$$2 * (b - 1) - 1 > 0$$

$$2b - 2 - 1 > 0$$

$$2b - 3 > 0$$

$$b > 3/2$$

(b) Puisque

$$b = (c + 10)/3 \quad \{b > 6\}$$

On a que,

$$b > 6$$

$$(c + 10)/3 > 6$$

$$c + 10 > 18$$

$$c > 8$$

7. Réponse

Puisque

$$a = 2b + 1$$

$$b = a - 3 \quad \{b < 0\}$$

On peut dire que

$$b < 0$$

$$a - 3 < 0$$

$$a < 3$$

Et donc,

$$a = 2b + 1 \quad \{a < 3\}$$

$$a < 3$$

$$2b + 1 < 3$$

$$2b < 2$$

$$b < 1$$