COMP 141: Parse Project Review

Instructions: In this exercise, we are going to review the parser project.

(1) Give ASTs for the following:

   (a) 4 + 3 - 2

   (b) r * 4 + s3

   (c) 3 / x / 1

   (d) c * 2 - 10 / 4

   (e) (1 + qq - 2 * 4) + c4 - s * 2 / 4 + 2

(2) Give pseudo-code for parsing

   (a) factors

   (b) elements

(3) Give ASTs for the following:

   (a) `x := 1`

   (b) `x := 1; y := 2 + 3`

   (c)
```
c4 := 2 * 3 / 5 + 6;
if 4 - 2 then skip else skip endif
```

   (d) `x := 1; y := 5; z := 6`

   (e)
```
if x then
          if y - 2 then
                  x := 5
          else
                  z := 6
          endif
   else
          t := 4 - 3
   endif
```

   (f) `while 5 do skip endwhile`

   (g)
```
x := 6;
while x + y do
          x := 5;
          y := x - 1
   endwhile
```

   (h)
```
if z then
          while x * 4 - 2 do
                  skip
          endwhile
   else
          x := 7
   endif;
   y := 1
```

(4) Give pseudo-code for parsing

   (a) base statements

   (b) if statements