

Exercise 1.40.

Define a procedure `cubic` that can be used together with the `newtons-method` procedure in expression of the form

```
(newtons-method (cubic a b c) 1)
```

to approximate zeros of the cubic $x^3 + ax^2 + bx + c$.

Answer.

It is well known that one could approximate zeros of the cubic $g(x) = x^3 + ax^2 + bx + c$ by finding the solutions of the function

$$g(x) = 0$$

By Newton's method, `cubic` should be a procedure that compute the function $x \mapsto g(x)$. Hence, the procedure `cubic` turns out to be

```
(define (cubic a b c)
  (lambda (x) (+ (cube x)
                  (* a (square x))
                  (* b x)
                  c))))
```

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