
CS 61A Structure and Interpretation of Computer Programs

Summer 2016

QUIZ 7

INSTRUCTIONS

- You have 25 minutes to complete this quiz.
- The exam is closed book, closed notes, closed computer, closed calculator.
- Mark your answers **on the quiz itself**. We will *not* grade answers written on scratch paper.

Last name	
First name	
Student ID number	
Instructional account (cs61a-_)	
BearFacts email (_@berkeley.edu)	
TA	
Name of the person to your left	
Name of the person to your right	
<i>All the work on this exam is my own.</i> (please sign)	

1. (5 points) This Factors Into Your Grade

Implement the `factors` procedure in Scheme, which takes an integer `n` that is greater than 1 and returns a list of all of the factors of `n` from 1 to `n-1` in **increasing order**.

You may only use the lines provided. You may not need to fill all the lines.

Hint: The built-in `modulo` procedure returns the remainder when dividing one number by the other. For example:

```
scm> (modulo 5 3)
2
scm> (modulo 14 2)
0
```

```
(define (factors n)

  (define (factors-helper i n)

    (if -----

        nil

        (if -----

            -----

            -----

        )

    )

  )

  (factors-helper -----)

)
```

```
scm> (factors 6)
(1 2 3)
scm> (factors 7)
(1)
scm> (factors 28)
(1 2 4 7 14)
```