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Simply Scheme Chapter
15 - Advanced Recursion

Tracing through "phone-spell" solution from AnneB with "234" as input

(phone-spell 234)

prepend-letters 'abc
output of this too large to show trace of

item 2 phone-letters
returns 'abc

first 234
returns 2

phone-letters

phone-spell (bf 234)
aka phone-spell (34)
returns 'dg dh di eg eh ei fg fh fi)

```
> (prepend-letters 'def '(g h i))
> >(prepend-letter 'd '(g h i))
> > (prepend-letter 'd '(h i))
> > >(prepend-letter 'd '(i))
> > > (prepend-letter 'd '())
< < < '()
< < <'(di)|
< < '(dh di)
< <'(dg dh di)
> >(prepend-letters 'ef '(g h i))
> > (prepend-letter 'e '(g h i))
> > >(prepend-letter 'e '(h i))
> > > (prepend-letter 'e '(i))
> > > >(prepend-letter 'e '())
< < < <'()
< < < '(ei)
< < <'(eh ei)
< < '(eg eh ei)
> > (prepend-letters 'f '(g h i))
> > >(prepend-letter 'f '(g h i))
> > > (prepend-letter 'f '(h i))
> > > >(prepend-letter 'f '(i))
> > > > (prepend-letter 'f '())
< < < < '()
< < < <'(fi)
< < < '(fh fi)
< < <'(fg fh fi)
```

prepend-letters 'def '(ghi)

item 3 phone-letters
returns 'def

first 34
returns 3

phone-letters

phone-spell (bf 34)
aka phone-spell 4
base case
returns '(g h i)

accumulate sentence
returns '(g h i)

item 4 phone-letters
returns 'ghi

phone-number
returns 4

phone-letters