

# Expression Results

In this exercise, we ask you to guess the results of the expressions by mentally simulating the execution of expressions.

## 1.1 Exercise: Results

Examine the following expressions. What is the value returned by the execution of the following expressions?

```
[ | anArray |  
  anArray := #('first' 'second' 'third' 'fourth').  
  anArray at: 2  
  
[ #(2 3 -10 3) collect: [ :each | each * each]  
  
[ 6 + 4 / 2  
  
[ 1 + 3 negated  
  
[ 1 + (3 negated)  
  
[ 2 raisedTo: 3 + 2  
  
[ 2 negated raisedTo: 3 + 2  
  
[ #(a b c d e f) includesAll: #(f d b)
```

### Exercise: unneeded parentheses

Putting more parentheses than necessary is a good way to get started. Such practice however leads to less readable expressions. Rewrite the following expressions using the least number of parentheses.

```
[ ((3 + 4) + (2 * 2) + (2 * 3))
[ x between: (pt1 x) and: (pt2 y)
[ (x isZero)
  ifTrue: [....]
[ (x includes: y)
  ifTrue: [....]
[ (OrderedCollection new)
  add: 56;
  add: 33;
  yourself
[ (Integer primesUpTo: 64) sum
[ ('http://www.pharo.org' asUrl) retrieveContents
[ (('2014-07-01' asDate) - '2013/2/1' asDate) days
[ (((ZnEasy getPng: 'http://pharo.org/web/files/pharo.png')
  asMorph) openInWindow)
[ ((#(a b c d e f) asSet) intersection: (#(f d b) asSet))
```

### Exercise: Execution sequence

Examine each of the following expression and write down the sequence of steps of their execution (which message is executed first and so on).

```
[ Date today daysInMonth
[ 5@5 extent: 6.2 truncated @ 7
[ Transcript show: (45 + 9) printString
[ ('2014-07-01' asDate - '2013/2/1' asDate) days
[ 42 factorial decimalDigitLength
[ (ZnServer startDefaultOn: 8080)
  onRequestRespond: [ :request | ZnResponse ok: (ZnEntity
  with: DateAndTime now printString) ]
[ (1914 to: 1945) count: [ :each | Year isLeapYear: each ].
[ $/ join: ($- split: '1969-07-20') reverse
[ DateAndTime fromUnixTime:
  ((ByteArray readHexFrom: 'CAFEBABE4422334400FF')
  copyFrom: 5 to: 8) asInteger
[ (String new: 32) collect: [ :each | 'abcdef' atRandom ]
[ 'http://www.pharo.org' asUrl saveContentsToFile: 'page.html'
```

## 1.1 Exercise: Results

```
[ '^.*.jpg' asRegex in: [ :regex |  
  '/tmp/foo.txt' asFileReference contents lines  
  select: [ :line | regex matches: line ] ]
```