

## Trace loops

Do one of the following two loop trace programs.

### A. JJ Repeat Loop with inner Choices

Trace following code for an input value of num = 4, indicate values at all stages.

```
-- Mystery Loop with Nested Choices
Boxes num, sum, index ofType int
Box done ofType bool
```

```
Input num -- 4
Set done = false
Set sum = 0
Set index = 1
```

Repeat

If (index == num) then								
Set done = true -----	done =	F	F	F	F	T	T	T
EndIf								
Inc sum by index -----	sum =	0	1	3	6	10	13	15
If not done then								
Inc index by 1 -----	index=	1	2	3	4	3	2	1
Else								
Dec index by 1								
EndIf								
ExitOn (index == 0)								
EndRepeat								
Output sum -----								16

### B. Java Nested For Loops

Trace the following nested loops, indicating the result at every stage.

```
for (int a = 1; a < 4; a++)
    for (int b = 0; b <= a; b++)
        System.out.println (a + b);
```

a =	1 1	2 2 2	3 3 3 3
b =	0 1	0 1 2	0 1 2 3
a+b =	1 2	2 3 4	3 4 5 6