Tower of Hanoi — execution

```
hanoi(3,"peg1","peg2","peg3");
** [move disc from peg1 to peg3]
** [move disc from peg1 to peg2]
** [move disc from peg3 to peg2]
** [move disc from peg1 to peg3]
** [move disc from peg2 to peg1]
** [move disc from peg2 to peg3]
** [move disc from peg1 to peg3]
```

Recursion - 1

```
define countdown1(n);
    if n = 0 then [all done] =>
    else countdown1(n-1)
    endif
enddefine;
```

```
: countdown1(5);
** [all done]
```

Recursion - 2

```
define countdown2(n);
    if n = 0 then [all done] =>
    else n =>
         countdown2(n-1)
    endif
enddefine;
```

```
: countdown2(5);
** 5
** 4
** 3
** 2
** 1
** [all done]
```

Recursion - 3

```
define countdown3(n);
    if n = 0 then [all done] =>
    else countdown3(n-1);
         n =>
    endif
enddefine;
```

```
: countdown3(5);
** [all done]
** 1
** 2
** 3
** 4
** 5
```

Recursion - 4

```
define countdown4(n);
    if n = 0 then [all done] =>
    else n =>
         countdown4(n-1);
         n =>
    endif
enddefine;
```

```
: countdown4(5);
** 5
** 4
** 3
** 2
** 1
** [all done]
** 1
** 2
** 3
** 4
** 5
```

Recursion - 5

```
define countdown5(n);
    if n = 0 then [all done] =>
    else countdown5(n-1);
         n =>
         countdown5(n-1)
    endif
enddefine;
```

```
: countdown5(5);
** [all done]
** 1
** [all done]
** 2
** [all done]
** 1
** [all done]
** 3
** [all done]
** 1
...
```

Recursion - 5 *continued*

```
** [all done]
** 2
** [all done]
** 1
** [all done]
** 4
** [all done]
** 1
** [all done]
** 2
** [all done]
** 1
** [all done]
** 3
** [all done]
** 1
** [all done]
** 2
```

```
** [all done]
** 1
** [all done]
** 5
** [all done]
** 1
** [all done]
** 2
** [all done]
** 1
** [all done]
** 3
** [all done]
** 1
** [all done]
** 2
** [all done]
** 1
```

```
** [all done]
** 4
** [all done]
** 1
** [all done]
** 2
** [all done]
** 1
** [all done]
** 3
** [all done]
** 1
** [all done]
** 2
** [all done]
** 1
** [all done]
```