Arithmetic commands

VM code

```
// d=(2-x)+(y+9)
```

Arithmetic commands

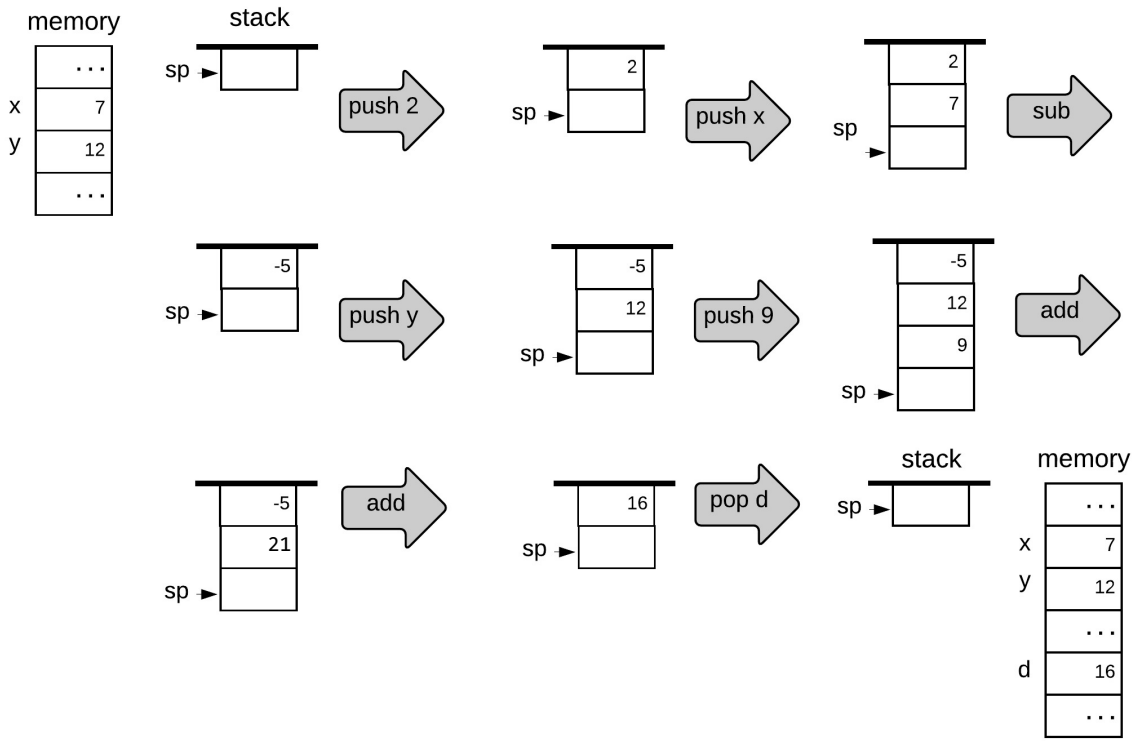
VM code

```
// d=(2-x)+(y+9)
push 2
push x
sub
push y
push 9
add
add
pop d
```

Arithmetic commands

VM code

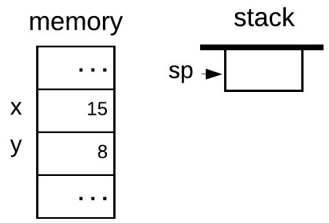
```
// d=(2-x)+(y+9)
push 2
push x
sub
push y
push 9
add
add
pop d
```



Logical commands

VM code

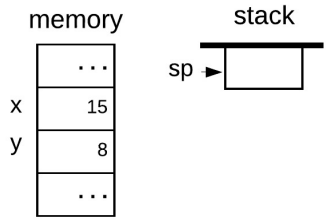
```
// (x<7) or (y==8)
```



Logical commands

VM code

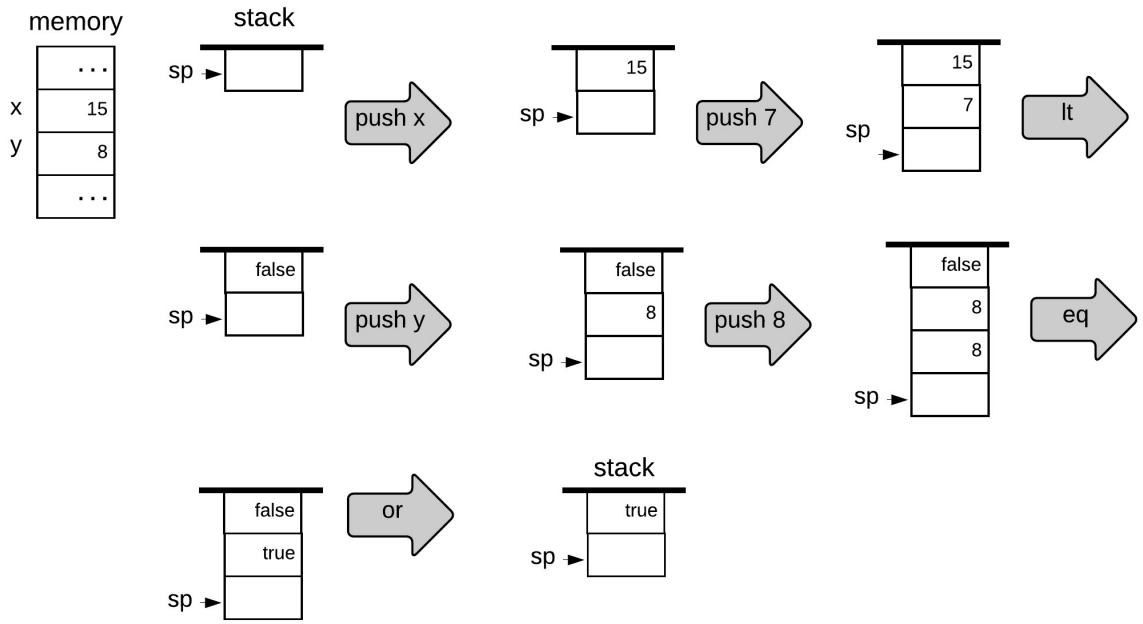
```
// (x<7) or (y==8)
push x
push 7
lt
push y
push 8
eq
or
```



Logical commands

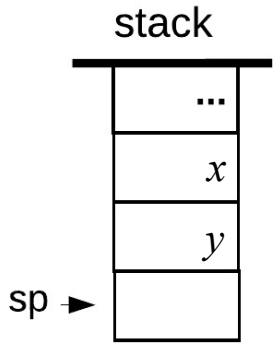
VM code

```
// (x<7) or (y==8)
push x
push 7
lt
push y
push 8
eq
or
```



Arithmetic / Logical commands

Command	Return value	Return value
add	$x + y$	integer
sub	$x - y$	integer
neg	$-y$	integer
eq	$x==0$	boolean
gt	$x > y$	boolean
lt	$x < y$	boolean
and	x and y	boolean
or	x or y	boolean
not	not x	boolean



Observation: Any arithmetic or logical expression can be expressed and evaluated by applying some sequence of the above operations on a stack.