①

```
In  [1]:  x = 5

In  [4]:  x

Out [4]:  what is printed here?

In  [3]:  x = 6
```

What if we click "Restart & Run All" from the "Kernel" menu?

```
s = Series(["A", "B", "C", "D"])
letters = Series(["x", "y", "z"], index=[1, 0, 3])
```

②

Expression	Result
s[0]	
s[-1]	
s[-2:]	
s + s	
letters[0]	
s + letters	
s[1:] + s[:-1]	

```
v = Series([-1, 1, 200, 191, 4])
```

③

Expression	Result
v < 0	
v * v == 1	
v[v > 100]	
v[v % 2 == 0]	
v[(v>0) & (v<100)]	

note: boolean series s and t are ANDed with **s & t** (not **s and t**).
also: boolean series s and t are ORed with **s | t** (not **s or t**)

Code:	storms.csv:
| ```python
path = "storms.csv"
tab = pd.read_csv(path)

map = DataFrame({
 "code": ["o","p","a"],
 "where": ["other","Pacific","Atlantic"]
})
``` | name,year,type,speed,place<br>alice,2016,tornado,100,o<br>bob,2016,hurricane,200,p<br>cindy,2017,tornado,150,o<br>dan,2018,tornado,300,o<br>eve,2018,hurricane,250,a |

----

④

Expression	Result
`map["code"]`	
`map.code`	
`type(map.code), type(map.where)`	
`tab.year.mean()`	
`tab.year == 2018`	
`tab.name[tab.year == 2018]`	
`map["where"] == "Atlantic"`	

`b = map["where"] == "other"`
`code = map.code[b].item()`
`nms = tab.name[tab.place==code]`
	# what are b, code, nms?

----

⑤

Expression	Result
`tab.loc[0]`	
`tab.loc[4, "type"]`	
`map.loc[0,"where"] = "mainland"` `place = map["where"][0]`	# what is place?
`tab.loc[:, "speed"] += 1` `col = tab.speed`	# what is col?

note: s.COL is a shortuct for s["COL"], unless COL collides with a method name
also: when a Series s contains exactly one one item, s.item() extracts it