

<https://v.gd/hapahu>

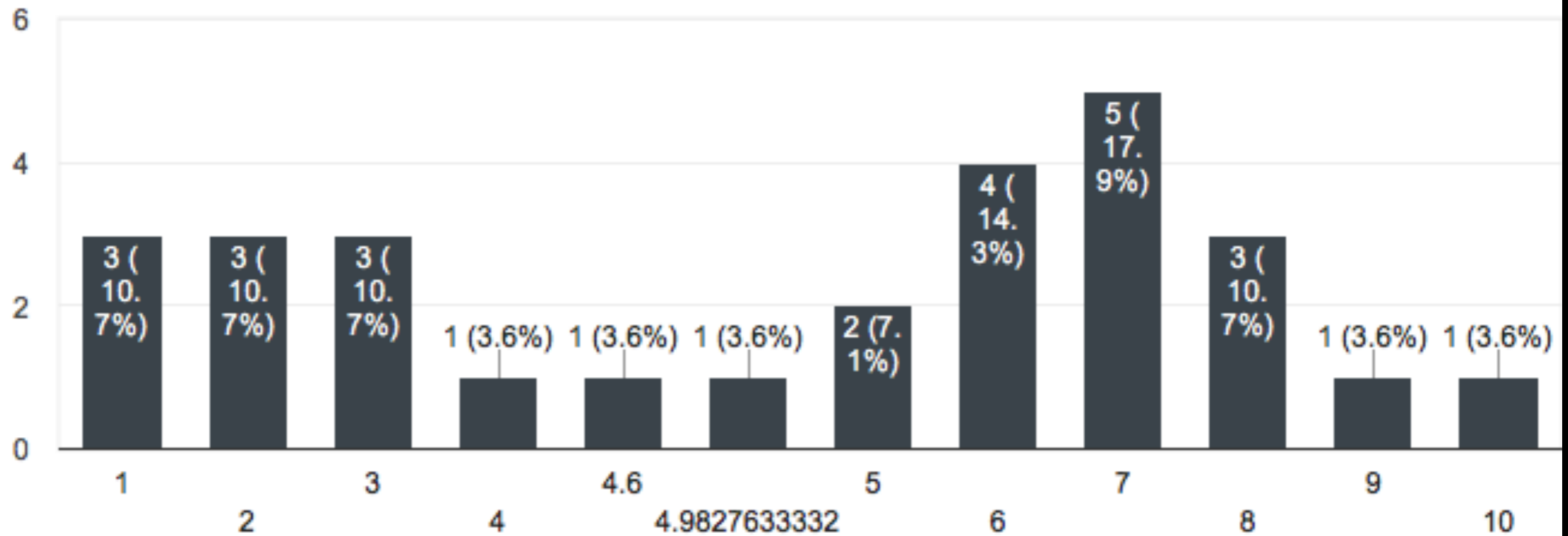
#7 Scheme

TA: Jerry Chen (jerry.c@berkeley.edu)

```
((((( SCHEME )))  
((( SCHEM )))  
((( SCHE )))  
(( SCHEM ))  
(( SCHEME ))  
((( SCHEMESC )))  
((( SCHE MESC )))  
(( SCHEM ESCH ))  
(( SCHEM ESCH ))  
((( SCHE SCHEMES )))  
((( SCHEM SCHEMES )))
```

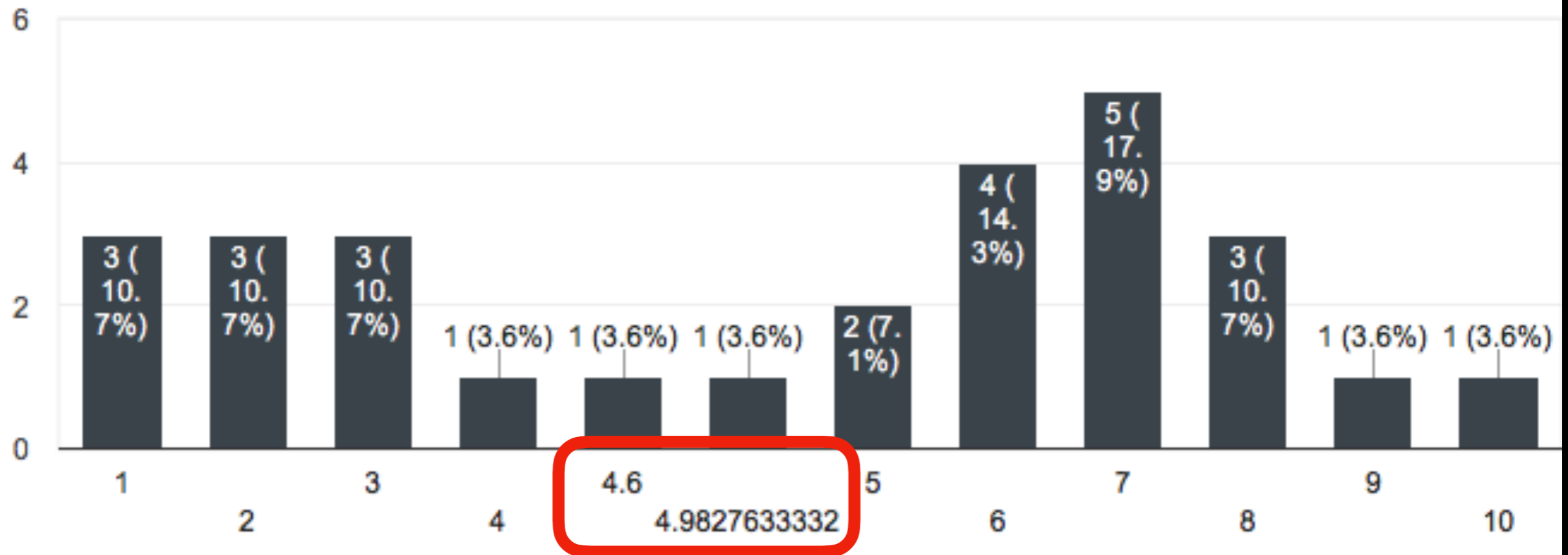

Pick a random number between 1 and 10 (inclusive)

28 responses



Pick a random number between 1 and 10 (inclusive)

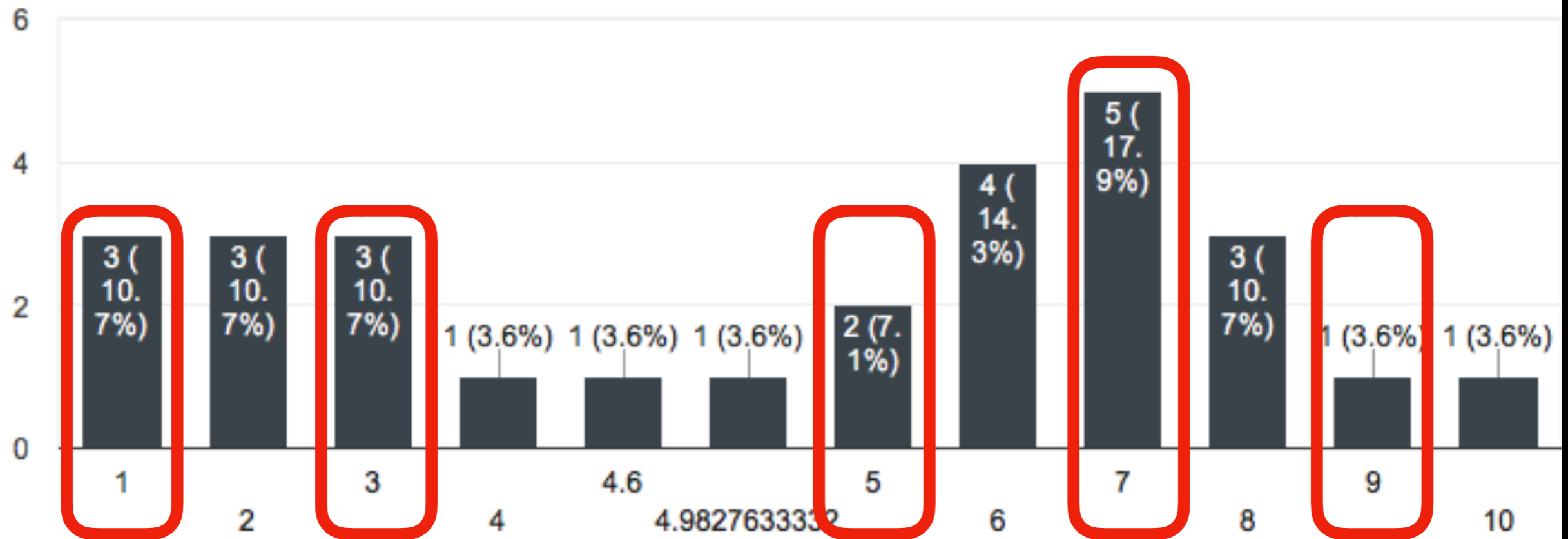
28 responses



Oops

Pick a random number between 1 and 10 (inclusive)

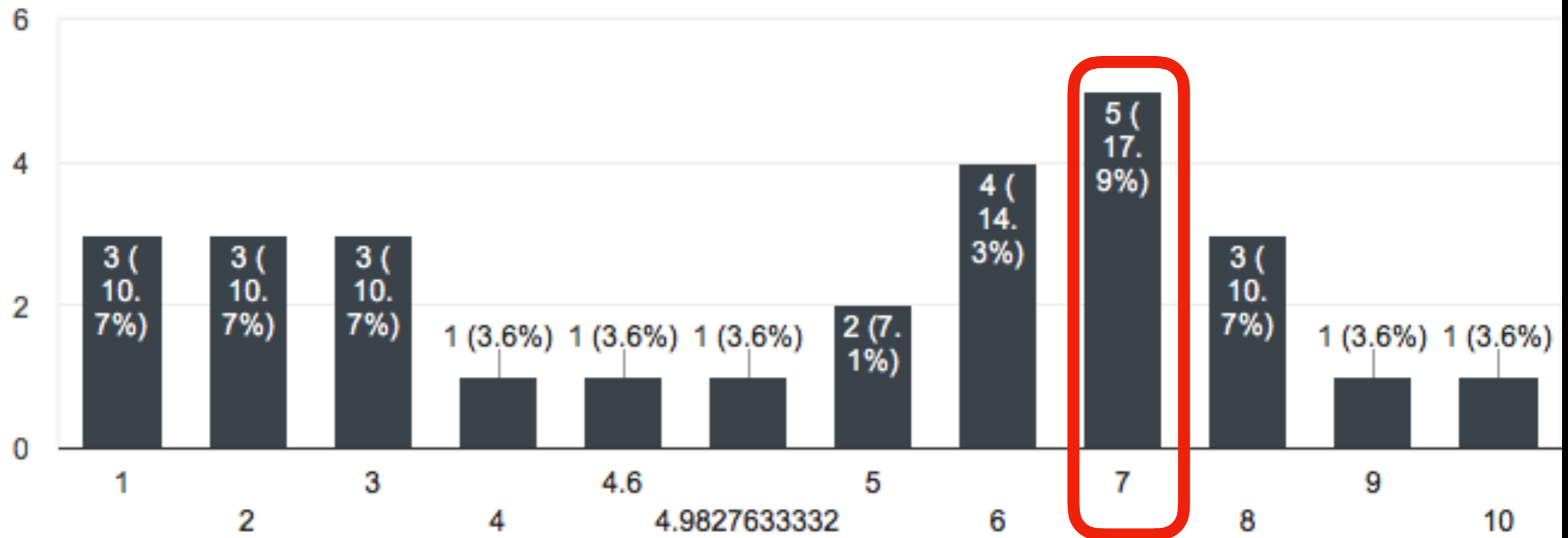
28 responses



Bias towards odds

Pick a random number between 1 and 10 (inclusive)

28 responses



Prime number bias?

Staff Interpreter



Help (7)

I'm trapped
in an
interpreter

```
scm> (demo 'songs)
(demo-song <name> [times] [tempo]) to play a song
Available songs: ode-to-joy, sarias-song, kakariko-village,
song-of-storms, fight-for-california
```

```
To load a song from a GitHub Gist, use:
(gist-song <gist-id> <name> [times] [tempo])
```

```
scm> (demo-song 'song-of-storms)
```

```
Preparing song...
Loading accordion...
Loading tango_accordion...
Loading oboe...
Loading vibraphone...
Loading percussion...
Playing...
```

```
scm> |
```

Staff Interpreter

scheme.cs61a.org

```
scm> (autodraw)
```

When interactive output is a pair, it will automatically be drawn.

(disable-autodraw) to disable

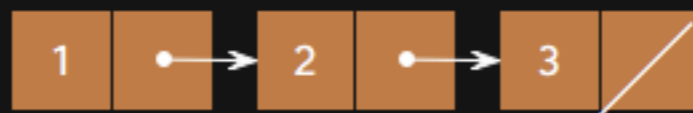
```
scm> '(1 2 . 3)
```

```
(1 2 . 3)
```



```
scm> (cons 1 '(2 3))
```

```
(1 2 3)
```



```
scm> |
```


Quoted Expressions

- Not **evaluated**
- Can create **compound objects** (generally, Scheme lists)

WWSD? 2.1

```
scm> (define a 1)
```

```
a
```

```
scm> a
```

```
1
```

```
scm> (define b a)
```

```
b
```

```
scm> b
```

```
1
```

```
scm> (define c 'a)
```

```
c
```

```
scm> c
```

```
a
```

WWSD? 3.1

```
scm> (+ 1)
```

```
1
```

```
scm> (* 3)
```

```
3
```

```
scm> (+ (* 3 3) (* 4 4))
```

```
25
```

```
scm> (define a (define b 3))
```

```
a
```

```
scm> a
```

```
b
```

```
scm> b
```

```
3
```

WWSD? 4.1

```
scm> (if (or #t (/ 1 0)) 1 (/ 1 0))
```

```
1
```

```
scm> (if (> 4 3) (+ 1 2 3 4) (+ 3 4 (* 3 2)))
```

```
10
```

```
scm> ((if (< 4 3) + -) 4 100)
```

```
-96
```

```
scm> (if 0 1 2)
```

```
1
```

Scheme Lists

"Bonus" questions! Draw diagrams and WWSD

```
scm> (list 1 '(2 . (3)) '(4) 5)
```

```
scm> (list 1 nil)
```

; Also, rewrite this using only cons

```
scm> (cons 1 nil)
```