Practice Quiz (02/28/2019)

1. **Write code that produces the following outputs.**

   a) A numerical result for rolling a D20 die

   b) A random even number between 0 and 100 (inclusive)

   c) Either 42 or 99

2. Evaluate these expressions:

```
1. (let* ([monkey "banana"]
     [banana "monkey"]
     [donkey (- (string-length banana) 1)]
     [tiger (string-ref banana donkey)])
  tiger)
```

```
2. (let ([a 2.3]
     [b (* a a)])
(inexact->exact b))
```

```
3. (let ([apples 2])
  (let ([oranges 3])
    (* apples oranges)))
```

```
1a)

(define twenty-side-1
  (lambda ()
    (+ 1 (random 20))))

(define twenty-side-2
  (lambda ()
    (random 1 21)))

1b)

(define rand-even-1
  (lambda ()
    (* 2 (random 51))))


(define rand-even-2
  (lambda ()
    (let ([x (+ 1 (random 100))])
      (if (even? x)
          x
          (+ 1 x)))))

1c)

(define either-or-1
  (lambda ()
    (list-ref '(42 99) (random 2))))

;; A **fun** mentor session solution
(define either-or-2
  (lambda ()
    (+ 42 (* 57 (random 2)))))


(define either-or-3
  (lambda ()
    (if (= (random 2) 0)
        42
        99)))

2)

;; #\y
;; Error: let* or nested let statements should be used for
multiple definitions
```

;; 6