4.14 Exercises

1. True, False

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2. The term Boolean comes from the name of the BritishmathematicianGeorgeBoole.

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3. Positive and negative integers except 0 .

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4. 0

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5. True

6.

(a) x == 3 : True

(b) x < y : True

(c) x >= y : False

(d) x <= y : True

(e) x != y - 2 : False

(f) x < 10 : True

(g) x >= 0 and x < 10 : True

(h) x < 0 and x < 10 : False

(i) x >= 0 and x < 2 : False

(j) x < 0 or x < 10 : True

(k) x > 0 or x < 10 : True

(l) x < 0 or x > 10 : False

7.

(a) b3 : True

```
(b) b4                                      : False
(c) not b1                                  : False
(d) not b2                                  : True
(e) not b3                                  : False
(f) not b4                                  : False
(g) b1 and b2                               : False
(h) b1 or b2                                : True
(i) b1 and b3                               : True
(j) b1 or b3                                : True
(k) b1 and b4                               : False
(l) b1 or b4                                : True
(m) b2 and b3                               : False
(n) b2 or b3                                : True
(o) b1 and b2 or b3                         : True
(p) b1 or b2 and b3                         : True
(q) b1 and b2 and b3                        : False
(r) b1 or b2 or b3                          : True
(s) not b1 and b2 and b3                    : False
(t) not b1 or b2 or b3                      : True
(u) not (b1 and b2 and b3)                  : True
(v) not (b1 or b2 or b3)                    : False
(w) not b1 and not b2 and not b3            : True
(x) not b1 or not b2 or not b3              : True
(y) not (not b1 and not b2 and not b3)      : True
(z) not (not b1 or not b2 or not b3)        : False
```

8.

(a) not (x == 2) : x != 2

(b) x < 2 or x == 2 : x <= 2

(c) not (x < y) : x >= y

(d) not (x <= y) : x > y

(e) x < 10 and x > 20 : False

(f) x > 10 or x < 20 : True

(g) x != 0 : True

(h) x == 0 : False

9.

(a) not (x == y) : x != y

(b) not (x > y) : x <= y

(c) not (x < y) : X >= y

(d) not (x >= y) : x < y

(e) not (x <= y) : X > y

(f) not (x != y) : x == y

(g) not (x != y) : x == y

(h) not (x == y and x < 2) : x!=y and x>=2

(i) not (x == y or x < 2) : x!=y or x>=2

(j) not (not (x == y)) : x == y

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10. True

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11. False

12.

```
x = int(input("Enter An Integer Number : "))
if x >= 1 and x <= 100 :
    print("OK")
```

13.

```
x = int(input("Enter An Integer Number : "))
if x >= 1 and x <= 100 :
    print("OK")
else:
    print("Out Of Range")
-
```

14.

```
day = (input("Enter an English day of the week : "))
if day == "Sunday" :
    print("domingo")
if day == "Moynda" :
    print("lunes")
if day == "Tuesday" :
    print("martes")
if day == "Wednesday" :
    print("miercoles")
if day == "Thursday" :
    print("jueves")
if day == "Friday" :
    print("viernes")
```

15.

(a) i is 3, j is 5, and k is 7 : i = 5 j = 5 k = 7

(b) i is 3, j is 7, and k is 5 : i = 3 j = 5 k = 5

(c) i is 5, j is 3, and k is 7 : i = 7 j = 3 k = 7

(d) i is 5, j is 7, and k is 3 : i = 5 j = 3 k = 3

(e) i is 7, j is 3, and k is 5 : i = 5 j = 3 k = 5

(f) i is 7, j is 5, and k is 3 : i = 7 j = 7 k = 3

16.

(a) 3 : wow 3

(b) 21 : whoa 21

(c) 5 : 6

(d) 17 : 27

(e) -5 : WoW -5

17.

(a) 0 : **** / *

(b) 1 : *** / *

(c) 5 : *** / *

(d) 50 : ** / *

(e) 500 : * / *

(f) 5000 : /

Why do the two programs behave as they do?

In the first program ,when a codition is true it's block will executed .Then the other conditions will be checked .
But in the second program when the truthy of a condition is checked and executed , the other conditions will not be checked.

18.

```
max = 0
min = 0
for i in range(0 , 5) :
    x = int(input("Please Enter An Integer Number ="))
if i == 0 :
    max = x
    min = x
if x < min :
    min = x
if x > max :
    max = x
print("Max = ",max)
```

```
print("Min = ",min)
```

19.

```
n1 = input("1st number : ")
n2 = input("2nd number : ")
n3 = input("3rd number : ")
n4 = input("4th number : ")
n5 = input("5th number : ")
if n1 == n2 or n1 == n3 or n1 == n4 or n1 == n5 or n2 == n3 or n2 == n4
or n2 == n5 or n3 == n4 or n3 == n5 or n4 == n5 :
    print("DUPLICATES")
else :
    print("ALL UNIQUE")
```