

Activity – Boolean expressions, logical operators, and if statements

NAME:

1. Indicate whether each Boolean expression below evaluates to True or False. Let $n=10$ and $k=20$. Test your answer in Thonny. For example, in Python you could write:

```
n = 10
k = 20
print( (n>10) and (k==20) )
```

- $(n>10)$ and $(k==20)$
 - $(n==10)$ and $(k==20)$
 - $(n>10)$ or $(k==20)$
 - $\text{not}((n>10)$ and $(k==20))$
 - $(n>10)$ or $(k==10$ or $k!=5)$
 - $(\text{not}(n>10))$ and $(\text{not}(k==20))$
 - $(n<20)$ or $(k==20)$
 - $(n>=10)$ and $(k<=20)$
 - $(n \% 2 == 0)$
 - $(k \% 3 != 0)$
2. Give a Boolean expression for each of the following. Determine if variable **num** is:
- greater than or equal to 0 and less than 100.
 - less than 100 and greater than or equal to 0, or it is equal to 200.
 - a strictly positive number but not larger than 150 (inclusive).

3. Consider these lines of code to answer the following questions. Test your answer in Thonny.

```
if x>5:
    print("A")
elif y<10:
    print("B")
elif x==10:
    print("C")
else:
    print("D")
```

- What prints out if initially $x = 5$ and $y = 11$?
- What prints out if initially $x = 10$ and $y = 11$?
- What prints out if initially $x = 0$ and $y = 5$?
- Is there any value of x or y that will print "C"?

Each individual will turn in this document (either after class or bring to the next class meeting).