Chapter 5
Lesson 2 Worksheet 2

DeMorgan's Laws can be used to simplify Boolean expressions. DeMorgan's Laws state:

- `!(a && b) == !a || !b`
- `!(a || b) == !a && !b`

For example, `(a <= 0 || b <= 0)` can be written as `!(a > 0 && b > 0)`

a) Which is the expression `!((a <= b) && (b > 10))` equivalent to?

1) `(a <= b) && (b > 10)`

2) `(a <= b) || (b > 10)`

3) `(a >= b) || (b < 10)`

4) `(a > b) || (b <= 10)`

5) `(a > b) && (b <= 10)`

b) Which is the expression `!(a || b)` equivalent to?

1) `(a || b)`

2) `!(a && b)`

3) `!(a) || !(b)`

4) `!(a) && !(b)`

5) `(a || b) && (a && b)`

c) Create a DeMorgansLaw application that illustrates that the laws stated above are true.