Worksheet W.A.15.1 Name_____

Boolean Algebra

1. Write an equivalent statement for the following:

   a. `!(age < 18)`
   b. `!(temperature >= 32)`
   c. `!(a <= b)`
   d. `!(money == happiness)`
   e. `!(time != 5)`

2. The expression `!((m < n) || (m != 5))` is equivalent to which of the following:

   a. `(m < n) && (m != 5)`
   b. `!(m < n) || !(m != 5)`
   c. `(m > n) && (m == 5)`
   d. `(m >= n) && (m == 5)`
   e. `(m <= n) || !(m == 5)`

3. The expression `(king != 3) && (queen != 4)` is equivalent to which of the following:

   a. `(king != 3) || (queen != 4)`
   b. `!((king == 3) && (queen == 4))`
   c. `(king == 3) || (queen == 4)`
   d. `!((king == 3) || (queen == 4))`
   e. `!((king == 3) && (queen == 4))`

4. Rewrite the following line of code using one of DeMorgan's Laws:

```
while (!(x < y && count <= 0))
```

   _____

5. Rewrite the following line of code using one of DeMorgan's Laws:

```
if (num < 1 && w != temp)
```

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