Practice Quiz 1

Closed Book and Notes

1. In a somewhat desperate attempt to impress your "best friends from another major", you tell them that you spent $\$100_2$ on a gift for your favorite ECE professor. In reality (expressed as a base 10 number), you spent:
   (A) $\$1_{10}$
   (B) $\$2_{10}$
   (C) $\$4_{10}$
   (D) $\$8_{10}$
   (E) none of the above

$2^2\ 2^1\ 2^0$
$1\ 0\ 0_2$

2. The **unsigned hexadecimal** number $\mathbf{(537)_{16}}$ is equivalent to the following **unsigned binary** number:
   (A) $(101\ 11\ 111)_2$
   (B) $(101\ 011\ 111)_2$
   (C) $(101\ 0011\ 0111)_2$
   (D) all of the above
   (E) none of the above

5 3 7
0101 0011 0111

3. The expression **X + X + X = X** is an example of:
   (A) involution
   (B) idempotency
   (C) associativity
   (D) distributivity
   (E) none of the above

— AND has precedence over OR

4. The **dual** of the expression **X + Y·Z** is:
   (A) **X·Y + Z**
   (B) **X′ + Y′·Z′**
   (C) **X·Y + X·Z**
   (D) **X′·Y′ + X′·Z′**
   (E) none of the above

$F^D = X \cdot (Y+Z)$
$= X \cdot Y + X \cdot Z$

5. The **complement** of the expression **X + Y·Z** is:
   (A) **X·Y + Z**
   (B) **X′ + Y′·Z′**
   (C) **X·Y + X·Z**
   (D) **X′·Y′ + X′·Z′**
   (E) none of the above

→ F^D with complemented variables yields the complement function, F'