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Quiz #3

① Convert to base 2, 8, and 16

39_{10}

$= 32 + 4 + 2 + 1$

$2^5 + 2^2 + 2^1 + 2^0$

$= 10\ 0111_2$

$= 27_{16}$

$= 37_8$

63_{10}

$= 32 + 16 + 8 + 4 + 2 + 1$

$= 2^5 + 2^4 + 2^3 + 2^2 + 2^1 + 2^0$

$= 11\ 1111_2$

$= 2F_{16}$

$= 77_8$

②

39_{10}

$= 0010\ 0111_2$

$1100\ 0001$ +

$1110\ 1000$

63_{10}

$= 0011\ 1111_2$

1's $1100\ 0000$

2's $1100\ 0001$

Answer: $11110\ 1000_2$

③ $(p \wedge q \wedge r) \vee (\sim p \wedge \sim q \wedge r)$