Answer on question #85102, Math / Discrete Mathematics

write the following boolean expressions in an equivalent sum of product canonical form in three variables x1, x2, and x3:

1. $x_1 * x_2$

2. $(x_1 \oplus x_2)' * x_3$

Solution:

1. $x_1 * x_2 = x_1 * x_2 * (x_3 \vee x_3') = x_1x_2x_3 \vee x_1x_2x_3'$
2. $(x_1 \oplus x_2)' * x_3 = (x_1x_2' \vee x_1'x_2)' * x_3 = (x_1' \vee x_2)(x_1 \vee x_2') * x_3 = (x_1'x_2' \vee x_1x_2) * x_3 = x_1'x_2'x_3 \vee x_1x_2x_3$

Answer:

1. $x_1x_2x_3 \vee x_1x_2x_3'$
2. $x_1'x_2'x_3 \vee x_1x_2x_3$