۹۹۳۱۰۷۵ علی نیکی

SAT Worksheet

$$(\overline{x_1} \vee x_2 \vee x_4 \vee \overline{x_7}) \wedge (x_3 \vee \overline{x_5}) \wedge (\overline{x_2} \vee \overline{x_3} \vee x_4 \vee \overline{x_6} \vee x_8)$$

Find a satisfying truth assignment for the SAT instance above.

$x_1 = 0$ $x_2 = 1$

$x_3 = 1$ $x_4 = 1$

$x_5 = 0$ $x_6 = 0$

$x_7 = 0$ $x_8 = 0$

Reduce the SAT instance above to a 3SAT instance using the method described in class.

$$(\overline{x_1} \vee x_2 \vee \overline{u_1}) \wedge (u_1 \vee x_4 \vee \overline{x_7}) \wedge (x_2 \vee \overline{x_5} \vee u_2) \wedge (x_3 \vee \overline{x_5} \vee \overline{u_2})$$
$$\wedge (\overline{x_3} \vee \overline{x_3} \vee \overline{u_3}) \wedge (x_4 \vee u_3 \vee \overline{u_4}) \wedge (u_4 \vee \overline{x_6} \vee x_8)$$

Find a satisfying truth assignment for the 3SAT instance.

$x_1 = 0$ $x_2 = 1$ $x_3 = 1$ $x_4 = 1$

$x_5 = 0$ $x_6 = 0$ $x_7 = 0$ $x_8 = 0$

u_1 ، u_2 ، u_3 ، u_4 ⟵ آزاد است

In your own time: repeat for SAT instance that is not satisfiable.