$$f_1 = x_2$$
$$f_2 = x_3$$
$$f_3 = x_4$$
$$f_4 = x_5 + x_1$$
$$f_5 = x_6 + x_1$$
$$f_6 = x_7$$
$$f_7 = x_8 + x_1 + x_1 x_2 x_3 x_5 x_6 x_7 x_8 + x_1 x_2 x_3 x_4 x_5 x_6 x_7 x_8$$
$$f_8 = x_1$$