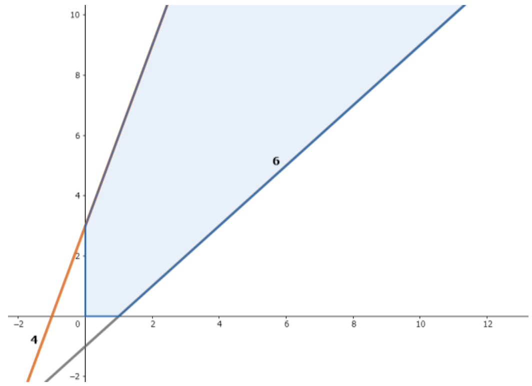

Fig. 9.the relaxed problem without the constraint in PP

From Figure 9, the relaxed problem does not have the constraint in which effects the relaxed problem unbounded. Then, we add the constraint 2 into this problem for guarantee the problem is bounded as Figure 10.

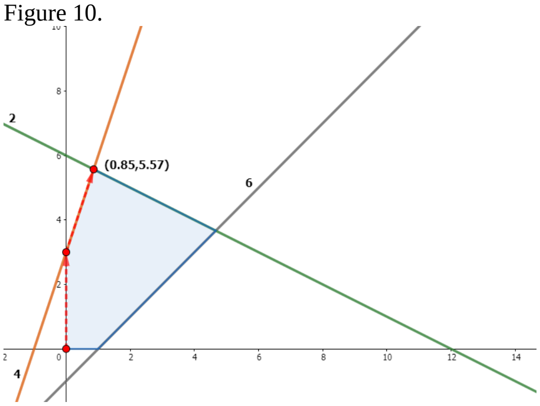

Fig. 10.the relaxed problem with the constraint in PP

From Figure 10, we found that we can solve the original problem by using only three constrains to get the optimal solution.

From example 1 and 2, we can construct the relaxed problem has only few constraints to obtain the optimal solution of the original problem. So, the computation can be reduced.

V. CONCLUSIONS

In this paper, we propose the technique to construct the relaxed problem to simplify the original problem, and the optimal solution can be found in the proposed relaxed problem. The algorithm starts by relaxing the greater-than or equal to constraints, then some constraints which is considered by the x-intercept and y-intercept from less-than or equal to constraints are selected to construct the relaxed problem. Since the relaxed problem consists of some edge of the feasible region, the other might be the redundant constraints which are ignored in the relaxed problem. Therefore, the computational time can be reduced. Due to the proposed examples, we can see that the original problems can be solved by using only two or three constraints to get the optimal solution. However, this work studied in 2-dimensional linear programming problems. We will extend this technique to construct the relaxed problem in n-dimensional linear programming problems..

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Chanisara Prayonghom was born in Prachuap Khiri Khan, Thailand, in 1997. She received the B.Sc. degree in mathematics from the Thammasat University, Pathumthani, Thailand, in 2015. Now she is studying the M.Sc. degree in mathematics from Thammasat University.

Dr.Aua-aree Boomperm was born in Surin, Thailand, in 1981. She received the B.Sc. degree in Mathematics from Khon Kaen University, Thailand, in 2004, M.Sc. degree in Computational Science from Chulalongkorn University, Thailand, in 2007, and Ph.D. degree in Applied Mathematics and Computational science from Chulalongkorn University, Thailand, in 2014. She is with Department of mathematics and Statistics, Faculty of Science and Technology, Thammasat University, Thailand.

Now she works at the Department of Mathematics and Statistics, Faculty of Science and Technology, Thammasat University, Thailand. Her current research interests include Linear Programming, Operations Research, and Optimization.