Consider the multi-objective linear program.

MAX z^1 = x(1)-x(2)

MAX z^2 = x(2)

MIN z^3 = x(1)

ST:

 x(1) >= 1

 x(1) =< 3

 x(2) =< 3

x(1), x(2) >= 0

a. Show graphically, the optimal solution(s) for each objective taken separately.

b. Determine graphically whether each of the following is an efficient solution:

 i) x(1) = 1 and x(2)=0

 ii) x(1) = 2 and x(2)=2

 iii) x(1)=3 and x(2) = 3

 iv) x(1)=3 and x(2) = 0

 v) x(1) 2 and x(2) = 3

 vi) x(1) 5 and x(2) = 0