

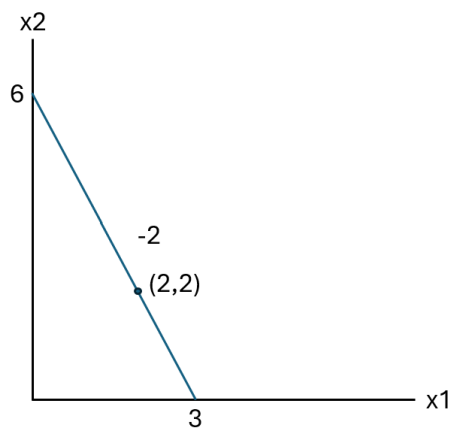
SOLUTIONS PROBLEM SET 2

1. CHAPTER 9

Exercise 1.

(1) $4x_1 + 2x_2 = 4(2) + 2(2)$

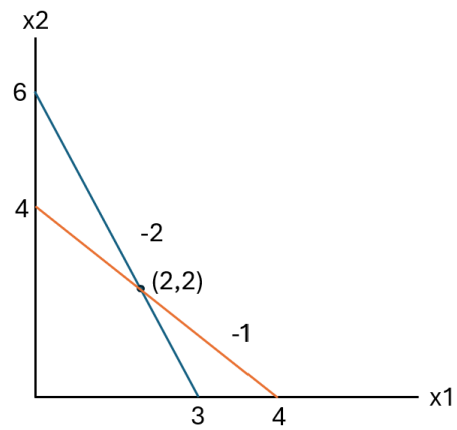
(2) See below.



(3) Net seller of 1. Net buyer of 2.

(4) $-1, 2$

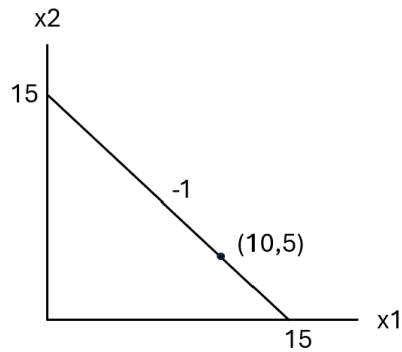
(5) See below.



Exercise 2.

(1) $2x_1 + 2x_2 = 2(10) + 2(5)$

(2) See below.



(3) Net buyer of 1, Net Seller of 2

(4) 2, -2

(5) They remain a net buyer and are **strictly better off**.

Exercise 3.

(1) $(4, 8)$

(2) Neither! They consume exactly their endowment.

Exercise 4.

(1) $5x_1 + x_2 = 5(2) + 1(10)$

$5x_1 + x_2 = 20$

(2) Using $MRS = -\frac{p_1}{p_2}$, we get:

$$-\frac{1}{\frac{1}{x_2}} = -\frac{5}{1}$$

$$x_2 = 5$$

They have 15 left over to buy x_1 which gets them $x_1 = 3$

Thus gross demand is $(3, 5)$.

(3) Net buyer of 1. Net seller of 2.

(4) From the tangency condition above:

$$-\frac{1}{\frac{1}{x_2}} == -\frac{p_1}{1}$$

$$x_2 = p_1$$

To make them neither a net buyer or net seller $x_2 = \omega_2$. So we need $x_2 = 10$. Thus, to make them neither, $p_1 = 10$.